Public Utilities

Volume 59 No. 8 April 11, 1957

FAIR VALUE REVISITED
By Charles K. Robinson

« »

The Aluminum Industry Turns to Coal
By Henry G. Schmidt

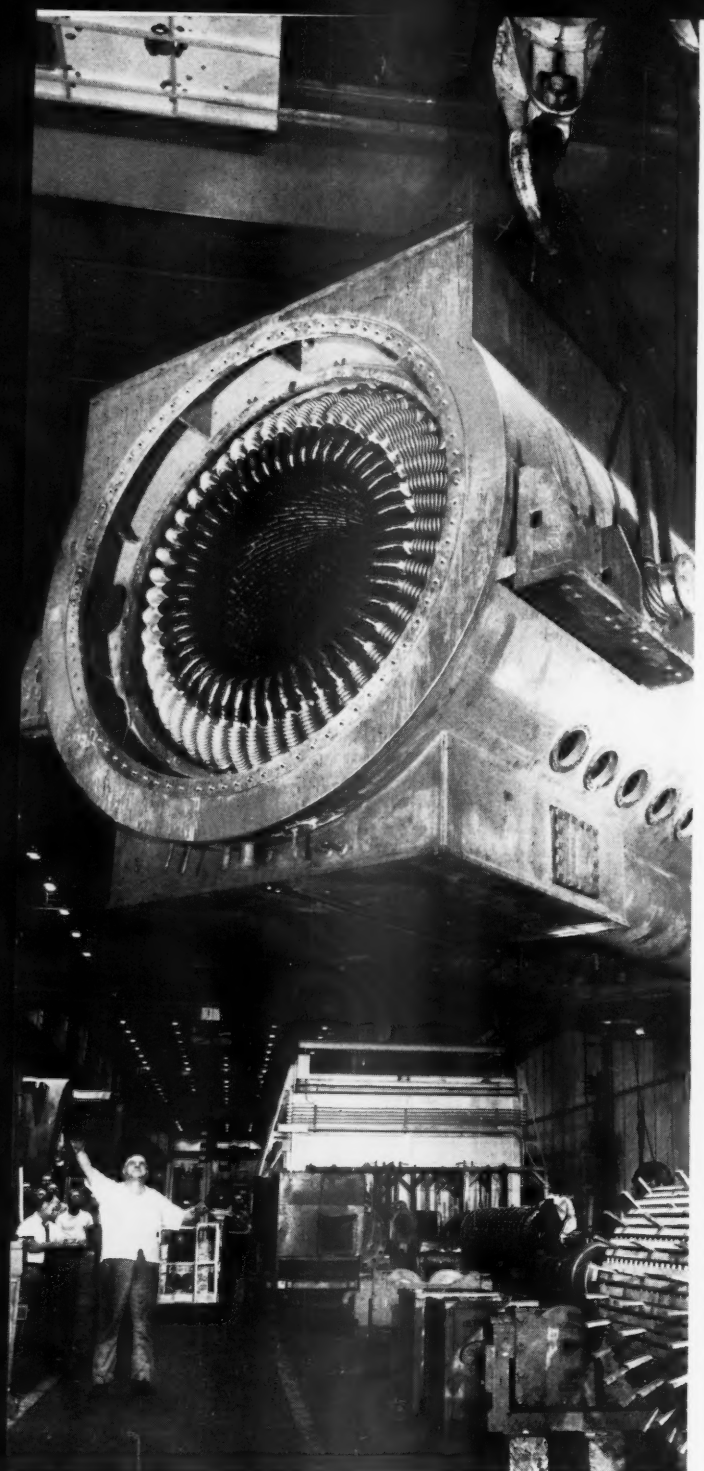
« »

Sharpening the Utility Nose for News
By Frederick W. Langbein

« »

Field Organization of Electric Utility Companies
By George W. Peak

78



World's first large generator with liquid-cooled stator windings shown prior to shipment to The Cleveland Electric Illuminating Company's Eastlake Plant.

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SIGNIFICANT SAVINGS in power plant construction costs are possible with units of higher rating since more power can be produced in the same amount of floor space. In addition, generators with larger capacities can be built and installed despite limitations on size imposed by shipping restrictions.

RATINGS AS HIGH AS 500,000 KVA, without substantially increased physical size over present large generators, are now possible because of this new General Electric development. For more information write for GER-1231, "Liquid Cooling of Turbine-Generator Stator Windings," Large Steam Turbine-Generator Department, General Electric Co., Schenectady 5, New York.

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Public Utilities FORTNIGHTLY

VOLUME 59 APRIL 11, 1957 NUMBER 8

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With the emergence of inflationary pressures practical considerations may now demand that regulators take a fresh look at the fair value rule.

The Aluminum Industry Turns to Coal ..... *Henry G. Schmidt* **515**
Recently, the aluminum industry has been spotting the location of underground "fossil" fuel reserves and planning the construction of its new adjacent reduction facilities.

Sharpening the Utility Nose for News ..... *Frederick W. Langbein* **520**
Scarcely a day goes by in the operation of any public utility company which does not produce some newsworthy event or development.

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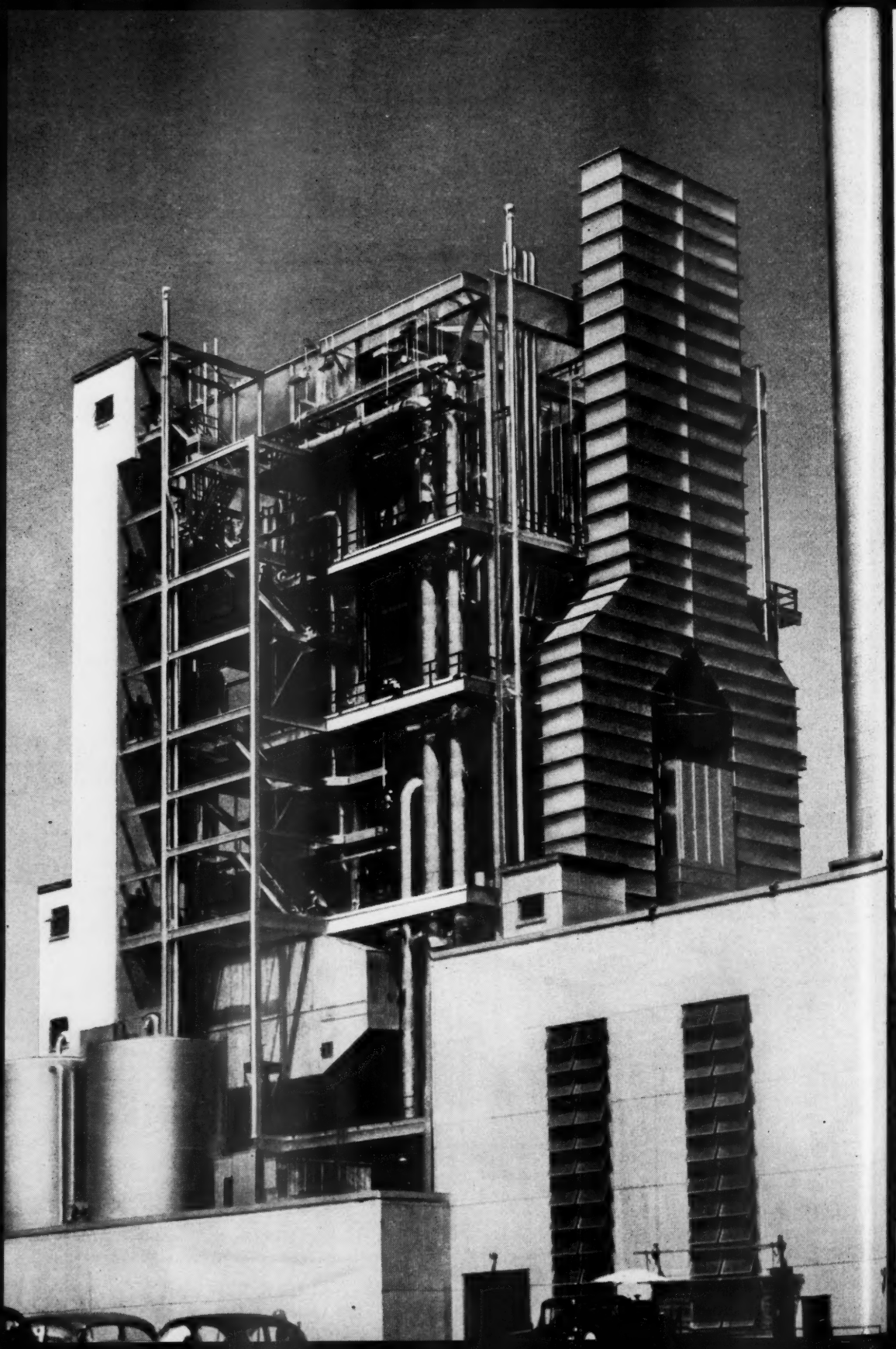


Advanced B&W Engineering in New Radiant Reheat Boiler Helps Produce

More Low Cost Power for Oklahoma

A B&W Radiant Reheat Boiler, burning natural gas, has gone on the line at the Riverbank Station of Oklahoma Gas & Electric Company at Muskogee. It is equipped with fifteen of the largest gas spud burners ever manufactured by B&W, and is designed for future conversion to coal-burning.

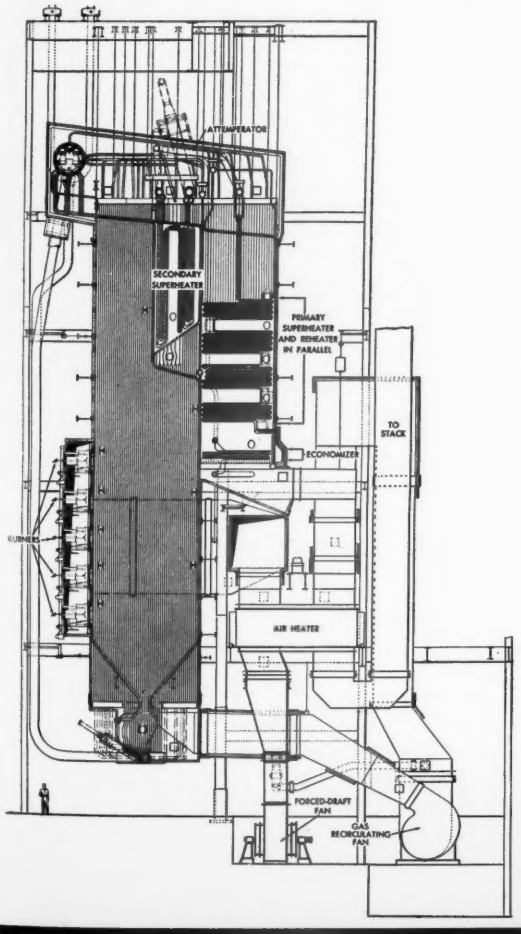
Among Design Features assuring increased station generating efficiency with this boiler is the recirculation of gas for steam temperature control. The gas is introduced without interference with the combustion process. Recirculation of a portion of the flue gas in a boiler makes it possible to obtain the desired steam temperature at spec fied fractions of full load—an important requir ment for top turbine performance.

Natural Circulation is made possible by B&W Cyclone Steam Separators. This brings abo really important savings in operating and maint nance costs. B&W's steam separating system i sures high purity steam for the turbine and kee the turbine on the line for longer periods betwe cleanings. Higher turbine efficiency is consis ently maintained.

These B&W engineering advances, plus prov high availability, are major reasons why Okl homa Gas & Electric has on order two mo units similar to the new Riverbank boiler. Oth B&W Boilers already are at Mustang Statio Oklahoma City; Horse Shoe Lake Station, Harra and Arbuckle Station, Sulphur.

Important to Oklahoma Gas & Electric and its eng neers, in selecting B&W Boilers, was the friend service and excellent engineering so close hand from the nearby link in a national chain plants and engineers. Progressive electric co panies and their consulting engineers know th nearly a century of steam generating experien supports B&W research, development, enginee ing, and design. This pool of knowledge is avai able to you, to help you meet your central statio requirements. The Babcock & Wilcox Compan Boiler Division, 161 East 42nd Street, New Yo 17, New York.

G-838-



BABCOCK & WILCOX

BOILER DIVISION

B&W Radiant Reheat Boiler at Oklahoma Gas & Electric Company Riverbank Station. Steam capacity is 1,200,000 lbs per hr. Boiler d sign pressure is 2150 psi. Steam pressure is 1935 psi at superheat outlet and temperature is 1005F with reheat to 1005F. Sargent Lundy, Chicago, Consulting Engineers.

Pages with the Editors

THE stubborn problem of inflation, which scholarly historians have traced all the way back to the Roman Caesars and beyond that, is likely to remain with us as long as the law of supply and demand continues to operate. The occasional lack of balance between rapidly increasing demand for goods and services in short supply inevitably pushes up price levels in any free economy. It also pushes them up in controlled economies through the subterfuge of black market operations.

ONE of the interesting and puzzling aspects of this age-old problem is the persistent idea among some economists, reformers, political leaders, and others that prices can somehow be stabilized indefinitely by man-made laws and regulations. The controversy between the use of a cost rate base and a fair value rate base, which has bedeviled public utility regulation almost since its inception in the United States, is only one aspect of this broader and continuous conflict between supply and demand during periods of unbalanced economy which we call inflation.

ADMITTING all the advantages of convenience and mathematical certainty which the original cost formula gives in terms of fixed dollars, the blunt fact remains that if there is an inflationary movement drastic enough and sufficiently prolonged, a rigid cost base simply will not work satisfactorily. On the other hand, during periods of relative stability (or more gradual or so-called "creeping inflation") the cost base seems to work out all right with occasional adjustments through the return allowance.

CHARLES K. ROBINSON

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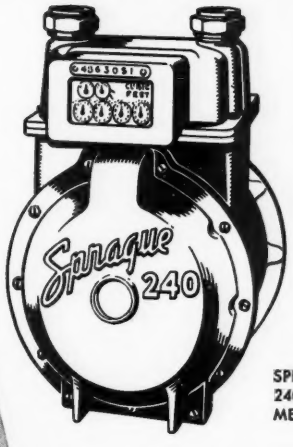
FREDERICK W. LANGBEIN

EVERY so often, however, there is need for a periodical examination or evaluation of regulation along these lines. We have such a re-examination in this article, under the challenging title "Fair Value Revisited," by CHARLES K. ROBINSON, well-known public utility attorney of Pittsburgh. He concludes that there is a basic and erroneous assumption which lies in the use of a system of strict accounting for the rate-fixing process which rests upon an unrealistic and false premise of a constant unchangeable dollar.

MR. ROBINSON is a graduate of Harvard Law School who has spent many years of rate case practice on behalf of public authorities as well as public utility companies. Between 1907 and 1927 he handled valuation and rate matters for the city of Pittsburgh and other municipalities. After 1927 he handled such matters



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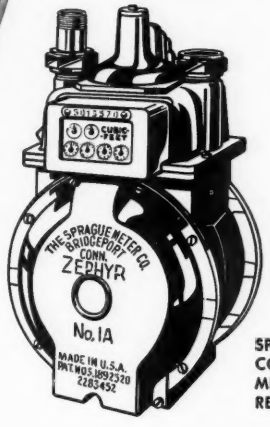

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for the Philadelphia Company and its affiliates, the Duquesne Light Company and Equitable Gas Company, and the Pittsburgh Railways Company. In more recent years he has been chiefly active in representing utility companies in rate proceedings before the state commissions of Pennsylvania and West Virginia and the Federal Power Commission.

* * * *

IN the article appearing on page 515, HENRY G. SCHMIDT, president of The North American Coal Corporation, tells about the shift of alumina reduction plants to coal mine-mouth plants. The swing of such major industry into the Ohio valley is of considerable importance. This author believes the Ohio valley development in aluminum and chemicals augurs well for the future.

* * * *

LIKE many other telephone career men—and women—FREDERICK W. LANGBEIN has known no other employer than the Bell system. Born in New York, he went to work for the New York Telephone Company in 1924, starting in the commercial department. Under "Mother Bell's" general policy of moving people around, for experience and growth, he worked on various assignments until, in 1942, he transferred to Washington, D. C., with the Chesapeake & Potomac Telephone Company, covering the nation's capital and suburban areas in Virginia and Maryland.

GEORGE W. PEAK

HENRY G. SCHMIDT

LANGBEIN'S news service experience, the basis of his article (beginning on page 520), entitled "Sharpening the Utility Nose for News," began when in 1953 he was assigned the job of familiarizing the public, and also employees, with the workings of the new Centralized Automatic Message Accounting system (CAMA), which called for new telephone habits in subscribers, due to dialing a wide range of numbers formerly reached with operator assistance. The interest acquired in news led to his appointment as manager of the C&P news service covering Washington and its Virginia and Maryland suburbs.

* * * *

IN our "What Others Think" department, beginning on page 547, we have an interesting survey of company organization practices in the electric utility industry. The author is GEORGE W. PEAK, director of organization planning for the Public Service Company of Indiana, Inc. He was formerly with the firm of Griffenhagen & Associates, consultants in management, and before that was engaged in teaching and economic research activities. MR. PEAK was educated at the University of Kentucky (BS, '34) and the University of Denver (MS, '41).

THE next number of this magazine will be out April 25th.

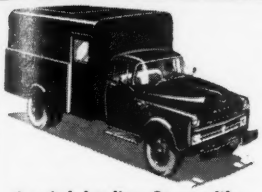
The Editors

DODGE *Power Giants*

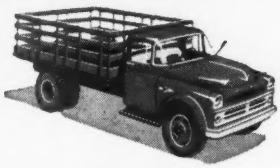
Dodge T700
Tandem

Dodge P300
Forward-Control

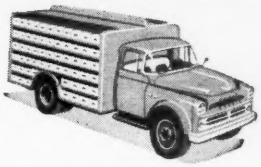
Dodge 600
with Van Body



Special bodies fit readily
on any Dodge chassis



Dodge 500
Stake



Dodge 400
with Beverage Body

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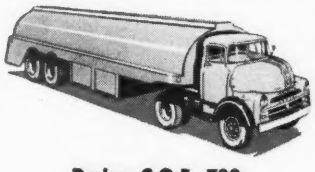
. . . In every weight class

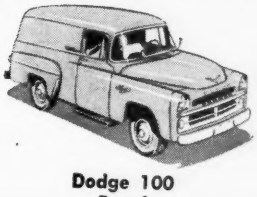
Dodge Power Giants give you an extra bonus of power.

From 204-hp. pick-ups to 232-hp. tandems, Dodge V-8's outpower the "other two" by as much as 31%. This extra power reduces engine strain, saves wear. What's more, Dodge engines, both V-8's and 6's deliver full power on regular gas.

Dodge hauls more payload, too . . . up to one-third more. And Dodge offers major advantages in driving ease, cab comfort and prestige-building good looks. See for yourself. Your Dodge dealer has a Power Giant to meet every trucking need.



Dodge C.O.E. 700
Tractor



Dodge 100
Panel

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Coming IN THE NEXT ISSUE

(April 25, 1957, issue)

★

COMES A BIG WIND AND PEOPLE WILL LISTEN

According to this author, James H. Collins, contributor of many articles on utility business relations, it seems to take a hurricane or something similarly spectacular to arouse interest and create an audience for public education on the relative merits and economy of overhead **versus** underground utility line construction. Both the electric utilities and the telephone utilities have had to weather considerable criticism for not burying lines. This is especially true where the "big blow" knocks down and out of service a considerable amount of customer lines. By way of contrast, it is noteworthy that as long as service is uninterrupted, the customer, public, and the press are not much interested in two facts of life important to both telephone and electric utility companies. These are overhead systems and city trees. Mr. Collins sees in these periodic upheavals of public opinion, which coincide, on the East coast at least, with the hurricane season, an opportunity to let the consuming public in on the problems pro and con.

THE RAILS SHIFT TO "PIGGYBACK"

A more efficient use of railroad and highway transportation facilities is resulting from continued expansion of trailer-on-flatcar operations, commonly called "piggyback." Offering better service for shippers and added revenues for the railroads, piggyback could have far-reaching effects on rates, costs, and our whole system of distribution. The author, John T. Collier, has been a student of transportation problems for many years and has written extensively on industrial subjects. He is now an official in the federal government.

WHY UTILITIES MUST ADVERTISE

Nobody in the public utility business, or for that matter in the regulatory business, has failed to hear the question often asked as to why a public utility should advertise. After all, the utility company has a service area monopoly which means no competition of the same kind in the same place, so there is nowhere else for the customers to go to get service. So, why is it necessary for the utilities to promote business which they are bound to get anyhow? James M. Stafford, Jr., director of advertising and publicity, Kansas City Power & Light Company, explains in this article the various objectives accomplished by utility advertising, some of which are quite necessary and important from the standpoint of good operations. Utility employees and prospective employees, as well as customers, can most effectively be reached for purposes of passing along essential information through the medium of paid advertising.

★

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***

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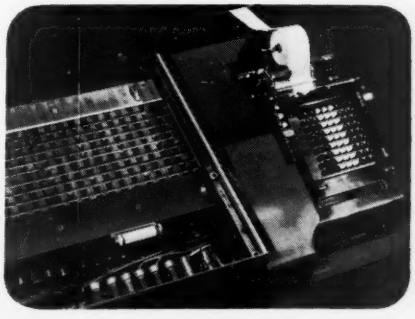

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Chairman of the board, The Peoples Gas Light and Coke Company.

"The indispensable ingredient of business is the individual human being, and it is always interesting to hear about 'Our Company's' experience with the outstanding group of men and women which make up its staff."

EDITORIAL STATEMENT
The Wall Street Journal.

"The evidence is that individual initiative decreases as government initiative increases; that private spending goes down as government spending goes up; that individual liberties decline in proportion to the areas government takes over."

ROY GIBSON
President, Hartford Electric Light Company.

"Our industry enjoys the enviable and somewhat unique position of having to work hard, year in and year out, to stay ahead of growing demands for service. All of us can take pride in this; the public would not keep coming back for more if we were not doing a good job. We have every reason to look to the future with confidence."

LOUIS M. HACKER
Dean, School of General Studies, Columbia University, New York, New York.

"We are a profligate country—lightly squandering our natural resources, our public funds, and our human talents. I suspect, in the long run, that the last named is the greatest crime of all, for our technical superiority and our ultimate triumph over world Communism will be based on the quality of the man power we have at our command."

JAMES O. EASTLAND
U. S. Senator from Mississippi.

"Creeping Socialism and the totalitarian concentration of power in the federal government must be stopped. The powers reserved to the sovereign states and the people must be reasserted. The country must be reawakened to the immortal principle of Anglo-Saxon freedom that man is destined to be the master rather than the servant of the state."

HERBERT HOOVER
Former President of the United States.

"In the whole world of ideas the most beneficent and dynamic force since the dawn of history has been man's quest and vigil for freedom. . . . the real dawn of freedom came when, after the Middle Ages, our founding fathers recovered the tablets of the rights of free men. They added to the text of those ancient tablets. Their genius provided safeguards for their preservation. Our forefathers established the principles of freedom so firmly that despite occasional stumblings, this Republic has had a longer life, and a prosperity for its people unmatched by any other nation in history. That turning of the pages of history was the fulfillment of God's purpose that the mind, spirit, and enterprise of men should be free. It gave courage and hope not alone to our people. It lighted an illuminating flame to guide all the waiting and anxious men and women of the earth."

"I Am Ambitious Of Your Esteem"

Captain John Paul Jones:

To the Countess of Selkirk, in 1778, Paul Jones wrote ". . . I am ambitious of your esteem and friendship, and would do anything, consistent with my duty, to merit it."

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For more than a century, Kerite has been ambitious of your esteem—by building the most lasting cable yet known. And more than three generations of Kerite craftsmen have given of their inherited skill and craftsmanship to assure the long life and service of Kerite Cable. The Kerite Cable Company takes pride in the fact that their product is chosen by buyers of integrity to safeguard installations around the world.

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GALLATIN
BARRETT

NEW DEAN H. MITCHELL STATION...

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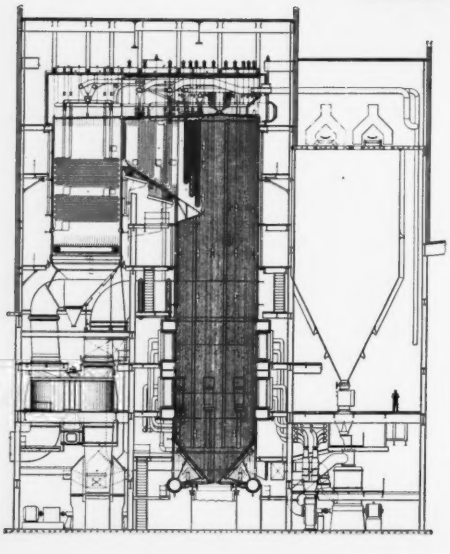
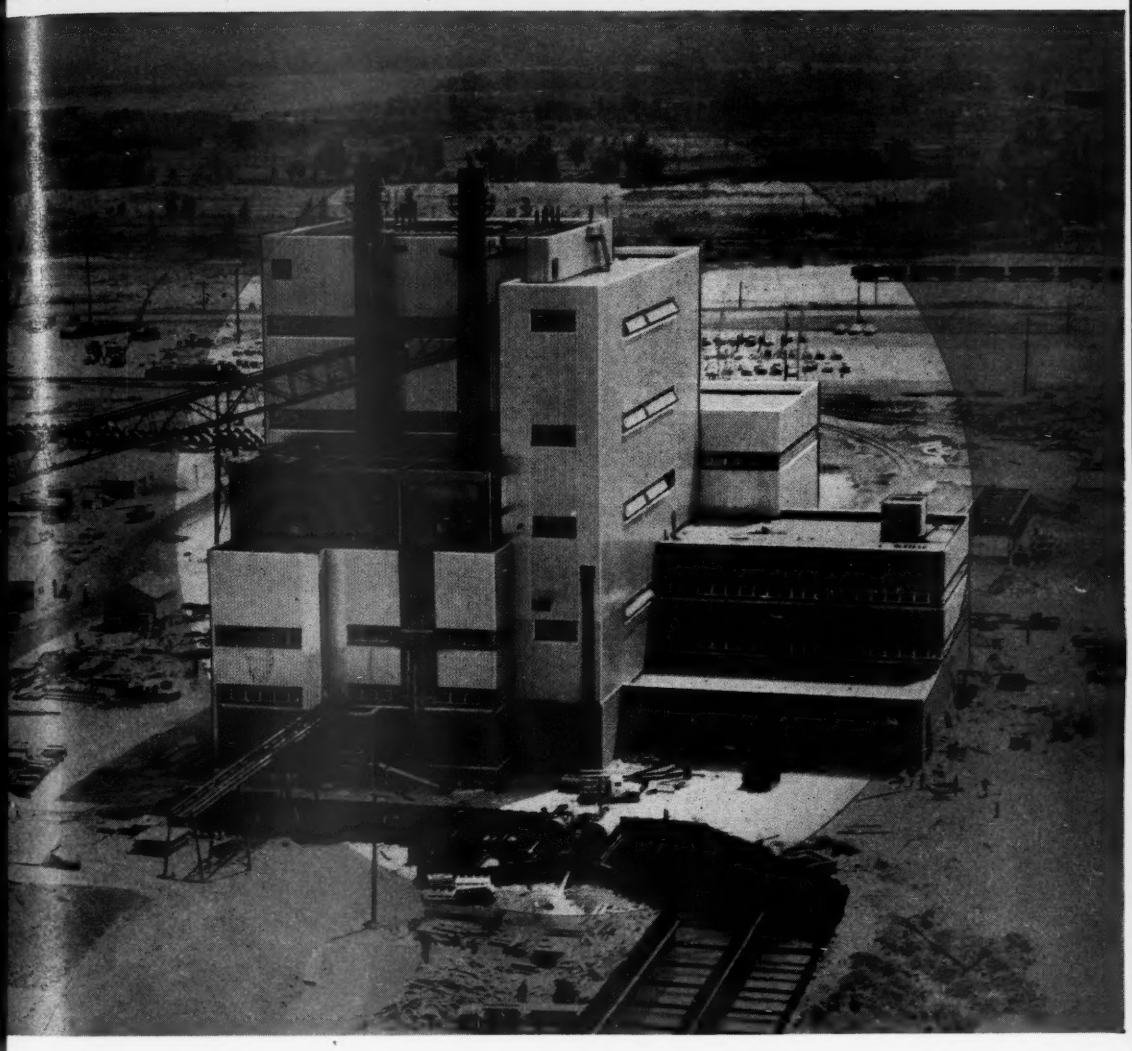


THE C-E UNIT SHOWN AT LEFT is in service at the Dean H. Mitchell tion. Second and third units of the design have been ordered. This is of the controlled circulation, re reheat type with a divided fu arrangement. The reheater secti located between the primary an ondary superheater surfaces an economizer section is located belo rear superheater surface. Regener type air heaters follow the econo surface. The unit is designed to s 138,100 kw turbine-generator op ing at a throttle pressure of 180 with a primary steam temperatu 1000 F, reheated to 1000 F. P ized coal firing is employed, using mills and tilting, tangential bu Natural gas can also be used an vision is made for future use of desired.

MITCHELL



The Dean H. Mitchell Station joined the Northern Indiana Public Service Company's system in December, 1956, when Unit No. 4 (first in this station) was placed in service. By 1959 the plant is scheduled to have 3 units in operation and will add 390,000 kw to the system's total capacity. It will represent the largest single power source in the company's network. Sargent and Lundy, Inc., are the consulting engineers.

Situated in Gary, Indiana, the Dean Mitchell Station helps to serve an area of 12,000 square miles in which residential demand and the needs of steel and heavy manufacturing industries have grown at a rapid rate . . . and show promise of even faster growth in the future. An increase of 90% in system load is projected for the period from 1951 to 1959. The Mitchell plant will supply this increase. And the plant-site anticipates further expansion. It may eventually accommodate three additional units.

Unit No. 4 and the two units now on order are of identical design. Each turbine-generator will be served by a C-E Controlled Circulation Boiler of the Radiant Reheat type. A cross-sectional elevation and a brief description of this boiler appear on the opposite page.

COMBUSTION ENGINEERING

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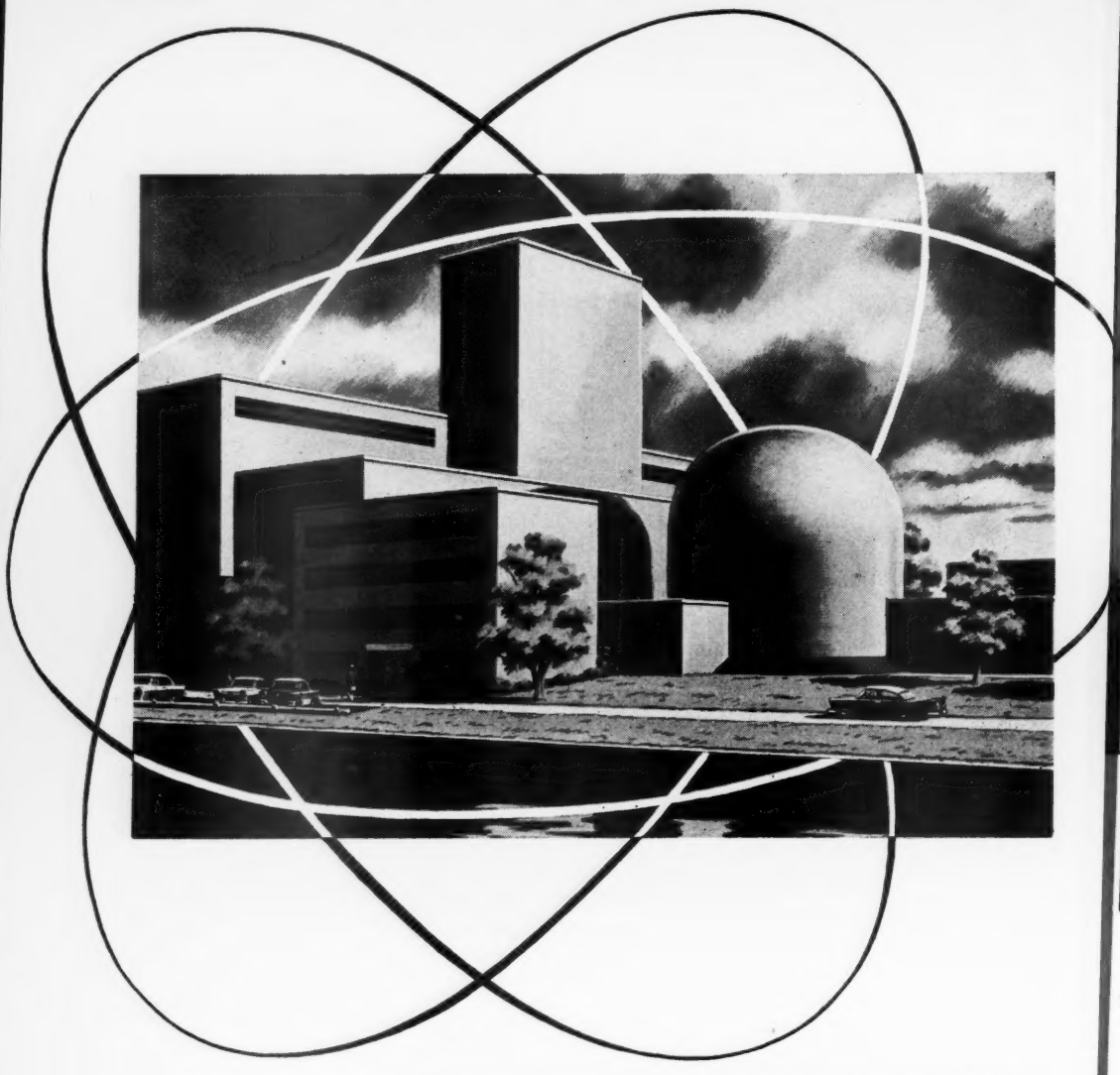

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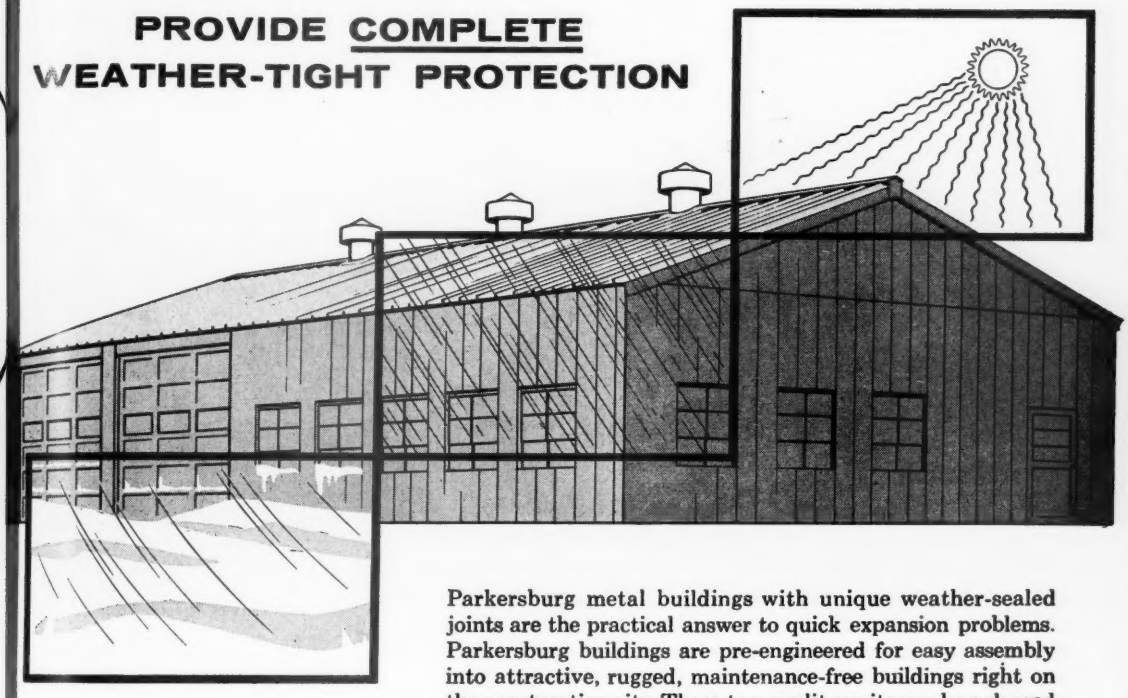

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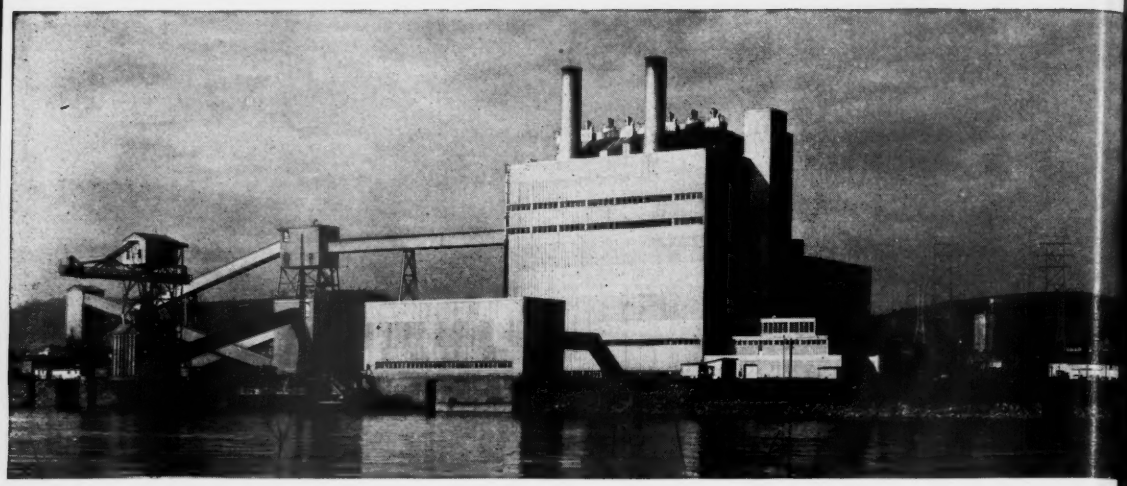

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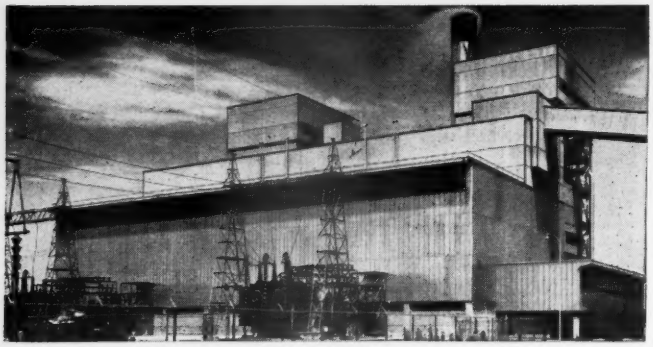

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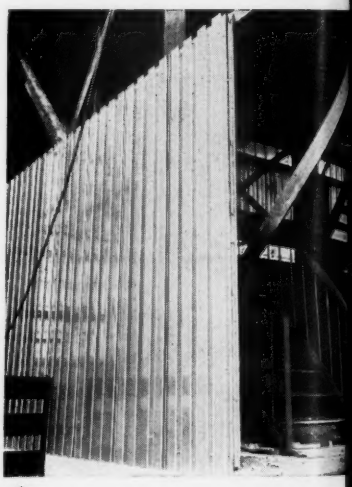

Q-Panel walls (above) go up quickly in any weather because they are dry and hung in place, not piled up.

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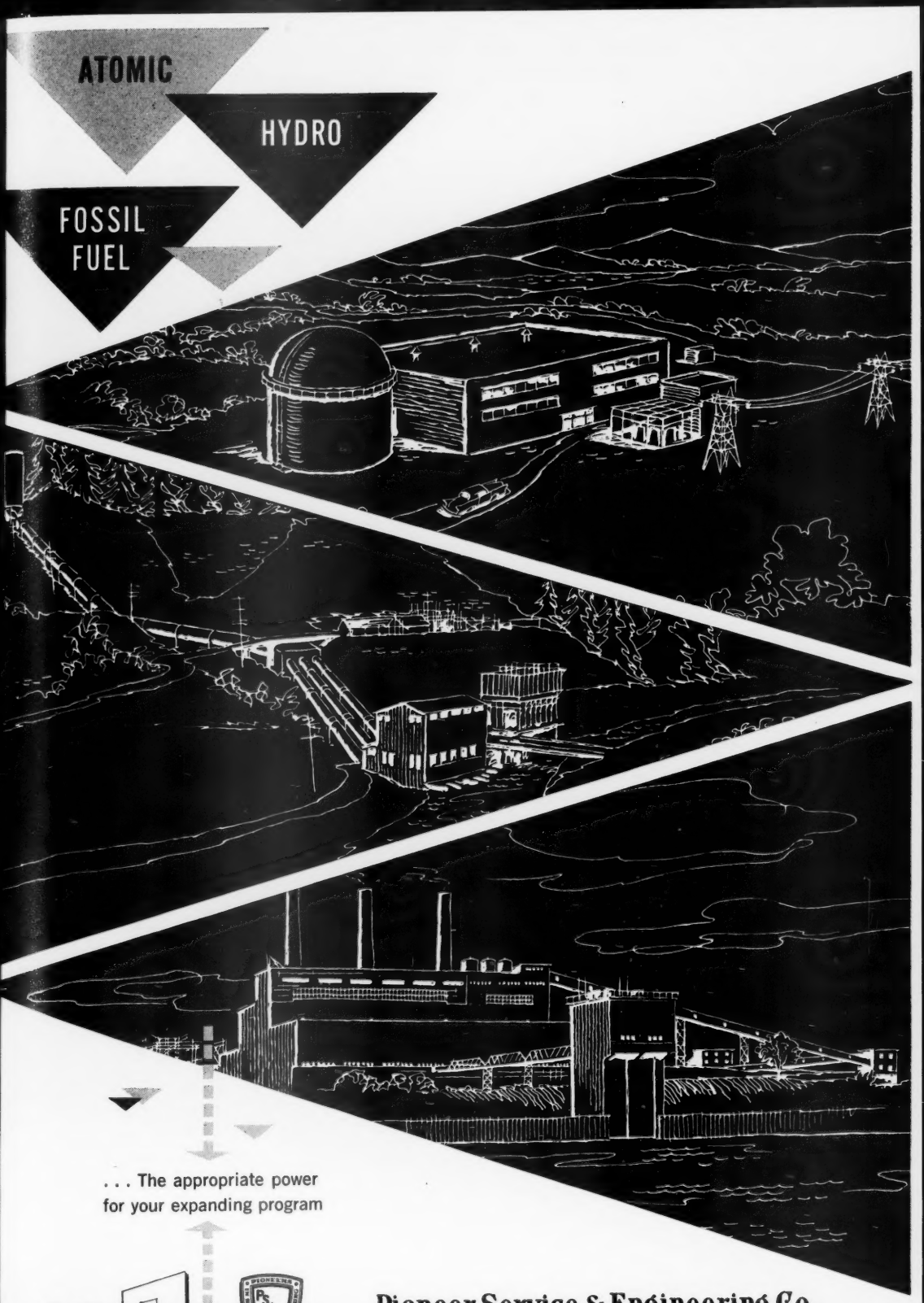

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UTILITIES
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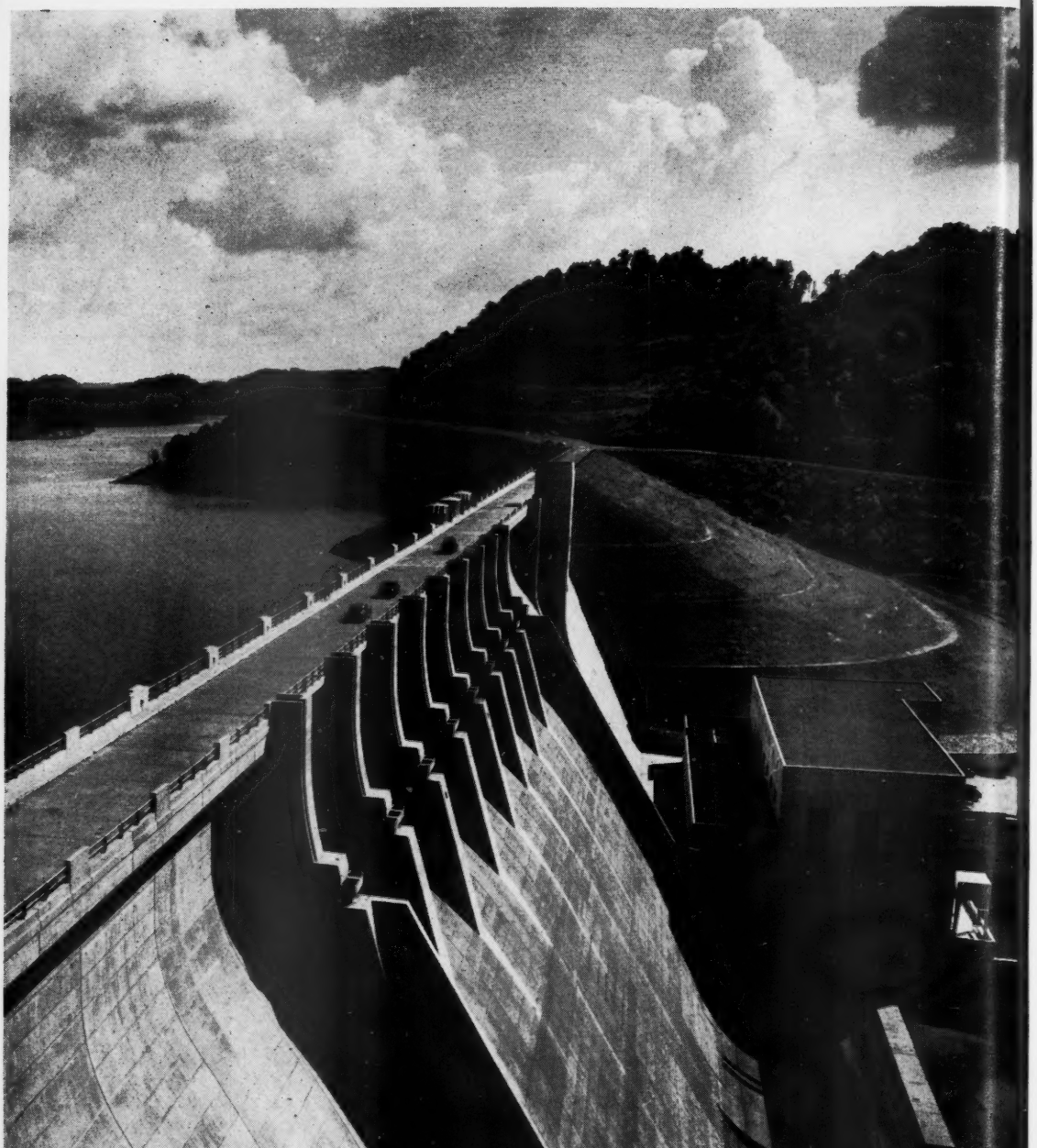
APRIL

Thursday—11 *American Welding Society ends 3-day welding show, Philadelphia, Pa.*	**Friday—12** *Maryland Utilities Association begins annual spring business conference, Baltimore, Md.*	**Saturday—13** *American Water Works Association, California Section, will hold meeting, Santa Monica, Cal. Apr. 27.* ***Advance notice.***	**Sunday—14** *Southern Gas Association will hold annual convention, New Orleans, La. Apr. 29-May 1.* ***Advance notice.***
Monday—15 *Annual Conference for Protective Relay Engineers begins, A&M College of Texas, College Station, Tex.*	**Tuesday—16** *Petroleum Industry Electrical Association and Petroleum Electric Supply Association begin annual convention and exhibit, Houston, Tex.*	**Wednesday—17** *Ohio Independent Telephone Association ends 2-day annual convention, Columbus, Ohio.*	**Thursday—18** *Southwestern Gas Measurement Short Course ends, Norman, Okla.*
Friday—19 *American Water Works Association, Pacific Northwest Section, will hold annual meeting, Tacoma, Wash. May 2-4.* ***Advance notice.***	**Saturday—20** *Air Conditioning and Refrigeration Institute will hold annual meeting, Hot Springs, Va. May 5-8.* ***Advance notice.***	**Sunday—21** *Rocky Mountain Electrical League begins spring conference, Denver, Colo.*	**Monday—22** *American Ceramic Society will hold annual meeting, Dallas, Tex. May 5-9.* ***Advance notice.***
Tuesday—23 *Biennial Conference on Electric Heating begins, Toledo, Ohio.*	**Wednesday—24** *Natural Gasoline Association of America begins annual convention, Houston, Tex.*	**Thursday—25** *Indiana Gas Association begins annual meeting, French Lick, Ind.*	**Friday—26** *Institute of Radio Engineers begins annual technical conference on television, Cincinnati, Ohio.*



Courtesy, Tennessee Conservation Department
Photo by Paul A. Moore

Hydro in the Cumberland Watershed

Center Hill project (Army Engineers) on the Caney Fork river, Tennessee.

Public Utilities
FORTNIGHTLY

VOL. 59, NO. 8 April 11, 1957

Fair Value Revisited

Is there a basic and erroneous assumption which lies in the use of a system of strict accounting for the rate-fixing process which rests upon an unrealistic and false premise of a constant, unchangeable dollar? Here is a challenging analysis of recent trends in commission-made and court-made law.

BY CHARLES K. ROBINSON*

"WHEN the mariner has been tossed for many days in thick weather . . . he naturally avails himself . . . of the earliest glance at the sun . . . to ascertain how far the elements have driven him from his true course."[1]

The earth has its seasons, produced by its slant toward the sun, and, likewise, the regulation of utilities has had its seasons, produced both by the economic patterns and the political trends of the times.

It is the legal duty of the legislature to fix utility rates for the future. This was the early procedure, but experience demonstrated the necessity for an agent to function for the legislature. This resulted in the creation of our public utility commissions which began about the start of this century and now exist in every state in the Union. Since "legislative power cannot be delegated," it follows that the act must definitely identify the principles of regulation and the appropriate standards.

* Attorney, Pittsburgh, Pennsylvania. For additional personal note, see "Pages with the Editors."

[1] Webster's reply to Hayne.

GENERALLY, two focal points of regulation have been adopted; namely, the "rate base" and the "rate of return" thereon.

Volumes have been written on how to determine these two points.

Today two quite different rate bases vie for consideration:

(a) the original cost rate base, determined solely by the original cost of the used and useful physical property (when first devoted to public use), less accrued depreciation; and

(b) the fair value rate base, in which all relevant factors are considered, including present price levels and probable trends.

But the determination of these two points is just a basic beginning since there is nothing static about a utility plant or its services. Both are rapidly changed by growth, by obsolescence, and by technological advances. Behind these problems also lie the difficult ones of the effects of inflation—the change in the buying power of money—and the increases in operating expenses. Then there are the ever-increasing taxes which are an inescapable operating cost.

Let us take a look at three leading cases to see how the patterns of regulation have changed during the last sixty years.

Patterns of Regulation (1898-1957)

THREE decisions of the Supreme Court of the United States stand out as landmark cases: Smyth *v.* Ames (1898) 169 US 466; McCardle *v.* Indianapolis Water Co. (1926) 272 US 400, PUR-1927A 15; and Federal Power Commission *v.* Hope Nat. Gas Co. (1944) 320 US 591, 51 PUR NS 193.

In each case the economic and political backgrounds had great influence.

"The Fair Value" Concept

SMYTH *v.* AMES came before the Supreme Court of the United States following the depression of 1894. It laid down the "fair value" rule; *i.e.*, that all relevant elements which might affect the rate base must be considered. Counsel for the public interests, of whom William Jennings Bryan was one, contended for present prices. They happened to be lower than the original costs. However, the court sustained "fair value," which requires appropriate consideration of both present prices and original cost.

The court also sustained the principle of "fair value" on constitutional grounds. The court said (169 US at pp. 526, 546):

> A state enactment . . . that will not admit of the carrier earning such compensation as under all the circumstances is just to it and to the public, would deprive such carrier of its property without due process of law . . . and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States. . . .
>
> We hold, however, that the basis of all calculations . . . must be the *fair value* of the property being used by it for the convenience of the public.

Further Development of Fair Value Concept in the 1920's

FOLLOWING World War I and the long steady rise of prices which began during the war, the case of Indianapolis Water Company came before the Supreme Court in 1926. There was the belief—

quite generally shared at that time—that we were on a new plateau of prices which would fairly well identify price levels of the years ahead. The court said (PUR-1927A at pp. 25, 36):

> . . . The high level of prices and wages prevailing in 1922 and 1923 should be taken into account in finding *value* as of January 1, 1924, and in the years immediately following. . . .
>
> * * * *
>
> When a court declares that the rate base shall be the *value,* instead of the historical cost or the amount prudently invested in the enterprise, it selects the standard for measuring the property on which compensation is to be paid. . . .

At that time and for several years thereafter rate bases came quite close to estimates of reproduction cost.

Origin and Adoption of the Present Concept of Original Cost

THE concept of a permanent plateau of prices was rudely shaken in the early 1930's by the depression, and associated with that problem was the growing conviction that there had been financial pyramiding and unwarranted manipulations of interrelated companies. Some of these combinations and consolidations of utility companies had been built up on the wildest dreams of future growth and earnings, and fantastic values were often placed on these assumptions.

THE empires of the Insulls and the Hopsons were beginning to totter as the mirage of future earnings disappeared, and the New Deal swept into the situation, destined to attack from every quarter and without quarter. It not only enacted legislation to regulate and control rates but every aspect of utility activities, including finances and mergers. The regulation of securities had already been provided for. These considerations led to the passage of the new Federal Power Act and the Public Utility Holding Company Act—with its death sentence to holding companies—and later to the Natural Gas Act of June 21, 1938. The write-ups (revaluations) which had taken place in the developmental period had frequently led to inflated financial obligations which diverted earnings, and were detrimental to the continuing performance of the utilities' obligations to the public. With the collapse of the Insull, Hopson, and other empires, a spirit of retaliation took over and became the guiding star of regulation —as dangerous in itself to sound utilities

¶ "IT *is the legal duty of the legislature to fix utility rates for the future. This was the early procedure, but experience demonstrated the necessity for an agent to function for the legislature. This resulted in the creation of our public utility commissions which began about the start of this century and now exist in every state in the Union. Since 'legislative power cannot be delegated,' it follows that the act must definitely identify the principles of regulation and the appropriate standards.*"

and to good service as the excesses of the 1920's.

A group of accountants with a deep appreciation of the importance of accounting and with a keen "sense of political direction" had been studying the problems. They advanced a new system for the classification of accounts of public utilities which was related primarily to original cost. This cost was defined as "the cost to the person who first devoted the property to public service," whether by the present owner or a predecessor owner. The Federal Power Commission took the leadership not only in adopting this classification of accounts but in supporting its general adoption. It was soon recognized that the new classifications of accounts might go beyond bookkeeping, and lead to the result that the prices so determined would become the rate base. That is substantially what happened in the administration of the law by the Federal Power Commission and by the states which have adopted the original cost formula.

By 1943 President Roosevelt had appointed all but one of the justices of the Supreme Court of the United States. The case of the Federal Power Commission *v.* Hope Nat. Gas Co. came before that court with all of the Federal Power Commission's support of the original cost concept, sustained by the new system of accounts which had already run the gauntlet of that court.

The majority opinion was written by Justice Douglas. It, in effect, decided that there was no constitutional requirement that consideration must be given to reproduction cost, or to present price levels; at least it has been so considered and administered.

The Supreme Court in the case of Federal Power Commission *v.* Natural Gas Pipeline Co. of America (1942) 315 US 575, 42 PUR NS 129, 138—the first case to come before it under the Natural Gas Act—had said:

> The Constitution does not bind rate-making bodies to the service of any single formula or combination of formulas. Agencies to whom this legislative power has been delegated are free, within the ambit of their statutory authority, to make the pragmatic adjustments which may be called for by particular circumstances. . . .

This statement was reaffirmed in the Hope case and it was further stated that "the rate-making process under the act, *i.e.*, the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests."

The Hope case laid down the doctrine of the "end result," a vague and uncertain standard. It stated (51 PUR NS at p. 201):

> . . . For we are of the view that the end result in this case cannot be condemned under the act as unjust and unreasonable from the investor or company viewpoint.

With such a standard the basic concept of law that legislative power cannot be delegated in large measure comes to an end. Mr. Justice Jackson, in his dissenting opinion in the Hope case, makes this point crystal clear. At page 225 of 51 PUR NS he states:

> . . . We need not be slaves to a formula but unless we can point out a rational way of reaching our conclusions they can only be accepted as resting on intui-

Equity *versus* Convenience in Regulation

"THE arguments against fair value are all ones of expediency, not ones of justice or fundamental fair treatment. It is obvious that fair value introduces certain problems of proof. There must be estimates of reproduction cost, and, of course, these are by necessity estimates, but they are estimates of the cost of a plant in existence. They are close enough for practical purposes, and are obviously more likely to be reasonably correct than contractors' estimates of a plant to be built, on which estimates billions of dollars have been and will be spent."

tion or predilection. I must admit that I possess no instinct by which to know the "reasonable" from the "unreasonable" in prices and must seek some conscious design for decision.

The court sustains this order as reasonable, but what makes it so or what could possibly make it otherwise, I cannot learn. . . .

IN the vague uncertainties of the "end result" not only legislative standards with their historic interpretations largely disappear, but judicial review becomes more and more difficult, if not impossible, and in effect the answer is left largely to the judgment of the individual members of the commission and to the judges of the appellate courts.

In the opinion of many, the so-called ghost of Smyth *v.* Ames was laid to rest in all those jurisdictions which did not have a legislative mandate to apply the "fair value" rule. This left only the standard as prescribed in the act of "just and reasonable rates"—admittedly an indefinite and highly flexible standard capable of many interpretations. One may fairly argue this standard does require appropriate consideration of present prices. How else could one meet the requirement that the "return to the equity owner should be commensurate with returns on investments in other enterprises having corre-

sponding risks?" Other enterprises include nonregulated as well as regulated, and they must and do give full consideration to changes in price levels. However, before the Federal Power Commission and those states which have followed the original cost formula, as now defined, inquiry is at an end on the subject of a rate base, when original cost has been determined.

THE decision of the United States Supreme Court in the Hope case has had far-reaching effects and a majority of the states now come close to applying its principles in regulating utility rates. Today only eleven states give some effect to present price levels, and even in these states the sound comprehensive principles of Smyth *v.* Ames and the Indianapolis Water Company case are sometimes forgotten.

The new classification of accounts developed by the Federal Power Commission in 1936, and originally regarded as merely an *aid to regulation,* has in effect become the standard and the final formula for regulation, both before the Federal Power Commission and most of the states.

If a similar system of accounting were to be carried back to the original first cost, Manhattan Island would be entered in the books today at $24.

It is an arbitrary approach which ignores the effect of inflation during the last sixty years. If affiliates have been involved the presumption of a fictitious inflation of value overcomes all other considerations.

It has simplified the problems of the commissions and, therefore, has great appeal, but it is wholly unrealistic, and generally unfair in its basic concepts and applications. The ease of its determination and use does not justify its adoption as the sole determinent of the rate base.

Merit and Values in the Fair Value Rate Base

IT was pointed out in Smyth *v.* Ames that there should be a comprehensive and complete approach to the problem of rate making. It was also recognized that the inevitable element of change—the most difficult ingredient of the problem—existed and had to be reckoned with.

In Los Angeles Gas & E. Corp. *v.* Railroad Commission of California (1933) 289 US 287, PUR1933C 229, 240-242, the Supreme Court of the United States adhered strictly to the fair value rule stating:

> This court has repeatedly held that the basis of calculation is the fair value of the property . . .
> . . . We have said that "such actual cost will continue fairly well to measure the amount to be attributed to the physical elements of the property so long as there is no change in the level of applicable prices." . . .
> . . . This court has repeatedly held that in order to determine present value, the cost of reproducing the property is a relevant fact which should have appropriate consideration. . . .

Prior to the new classifications of accounts the highest courts of the states and of the United States had almost universally stated that where there had been substantial changes in price levels original cost was no longer a proper standard or yardstick. More recently the courts and the commissions seem to have largely forgotten this obvious controlling fact in

their search for easier and quicker methods of finding an answer.

THE arguments against fair value are all ones of expediency, not ones of justice or fundamental fair treatment. It is obvious that fair value introduces certain problems of proof. There must be estimates of reproduction cost, and, of course, these are by necessity estimates, but they are estimates of the cost of a plant in existence. They are close enough for practical purposes, and are obviously more likely to be reasonably correct than contractors' estimates of a plant to be built, on which estimates billions of dollars have been and will be spent.

Furthermore, with the complete bookkeeping records now kept it is not too difficult or expensive to apply trended percentages to original cost and thereby obtain a trended original cost, which will serve as a very accurate guide to the general effects of inflation, over the life of the property—or, as the case may be in a few instances, deflation. Since neither original cost nor trended original cost or reproduction costs are final ends in themselves but only guides to judgment in arriving at "fair value," precise mathematical figures are not mandatory. The original cost of a piece of real estate or property sixty years old is obviously not a sound basis for judgment of value today, and is obviously far more out of line than any estimate of reproduction cost or of trended original cost. These criteria are also far more definite and clarifying than the vague and indefinite "end result." Furthermore, no one can close his eyes to obvious facts when inflation has so greatly changed the buying power of the dollar over the years, and when present costs may be two, three, or even four times the original costs.

ANOTHER consideration enters the problem at this time; namely, that regulation is really a substitute for competition. Yet if original cost is to be the standard, it is quite likely to produce rates lower than could be accomplished by competition created at present prices.

The ultimate goal is, of course, "just and reasonable rates." This calls for an adequate total return which will enable the company to give good service not only today but tomorrow, and the best service that the standards of living of the community will permit. A utility must be alert to the demands of today and of the future, and it must have income adequate to accomplish these results in a world of change, in which perhaps the most important factor is the change in price levels.

Some commissions have given indirect

¶ "THE *concept of a permanent plateau of prices was rudely shaken in the early 1930's by the depression, and associated with that problem was the growing conviction that there had been financial pyramiding and unwarranted manipulations of interrelated companies. Some of these combinations and consolidations of utility companies had been built up on the wildest dreams of future growth and earnings, and fantastic values were often placed on these assumptions.*"

consideration to inflation, and have made slight increases in the rate of return above the actual cost of money. For instance, in Florida—an original cost state by statute —larger returns have been allowed; to the large Florida Power Corporation, a return of 6.45 per cent, on an original cost rate base, and in other cases returns of from 6.12 per cent to 8 per cent have been allowed.

Some commissions have recognized the attrition to return resulting from the replacement of existing properties with more costly properties. However, this slight allowance for the current effects of inflation is minor compared to the losses already sustained by the past inflation.

To this extent—which is extremely limited—the concepts of Smyth *v.* Ames are again being recognized.

The Trend of Regulation Has Been Both To Reduce and Deny Previous Allowances

THE intangible items of value which played such an important part between 1898 and 1933 have been almost entirely eliminated. The important item, "going concern value," so clearly recognized in the Los Angeles case, where a substantial allowance was made for the value of an assembled and established plant against the "bare bones" of the property, is now generally omitted. Likewise, allowances for cost of financing and for organization are no more, or are given minor consideration in the over-all figures, and more recently because of accumulations of cash for payment of taxes, allowances for cash working capital are largely eliminated. Regulation has in effect become a one-way street downward.

Perhaps even more serious have been the suspensions of rates which have turned out to be in error, but for which no recoupment has been provided. Statutes have given commissions discretionary powers to suspend rates and have increased the periods of the suspensions. Because recoupment was not provided, the losses in some cases have been staggering.

A notable example of the injustice of such treatment is that of the Pittsburgh Railways Company, when between 1948 and 1953 seven applications were made for increased fares, largely because of increased wages. Many of these applications were suspended but in the end *all of the increases were approved.* However, the over-all result was that in the six-year period the losses due to the mistaken suspensions exceeded $5 million.

There is grave doubt whether the failure to provide for recoupment of losses does not violate constitutional requirements.

Up to date the salvation of the situation has come about by the tremendous growth and expansion of the industry, by the great technological advances, and by the high quality of the management. Nor can we overlook the fact that some commissions have been more realistic in their administration than their formulas and patterns of regulation.

Conclusion

HOWEVER much we desire it, there is no simple, precise formula which will assure the desired "end result."

It was originally pointed out that the fixing of rates is a legislative function, but this short history clearly reveals that the changes in the law have not had their

The Unstable Dollar

"THE fixing of 'just and reasonable rates' must function in a world of change, and must constantly readapt itself to the effect of those changes. It would, of course, be so much easier to think of dollars as something constant and unchangeable, but that unfortunately is not true, and has not been true during the last sixty years. The company must have an adequate TOTAL *allowance in terms of the present buying power of money, because that is the only kind of money that is in use today. Such an adequate total return will in the end assure the two indispensables of (a) 'just and reasonable rates,' and (b) the ability to give and continue to give good and up-to-date service."*

origins primarily in statutory law but in commission- and judge-made law. In other words, through the processes of interpretation—dominated by the climate of public opinion (political direction)—we have actually witnessed not only a substantial revolution, but a setting aside of the basic law of the subject; *i.e.*, "legislative power cannot be delegated."

It is recognized that the effect of the new classifications of accounts has been diminished by the passage of time since 1936, due to the tremendous growth and replacement of old plant by new plant at much higher prices. Nor are we unmindful of the fact that 50 per cent to 60 per cent of utility securities commonly carry fixed rates of return.

However, the basic and erroneous assumption that lies in the use of a system of accounting, which rests upon the unrealistic and false premise of a constant, unchangeable dollar, still remains and persists. During the twenty years from 1936 to date prices have generally more than doubled. Therefore, reliance today solely upon any accounting concept contains a basic error. We cannot have the rigidity

of accounting formulas for the fixing of rates, when everything about the dollar is different today from what it was twenty years ago—except the name. The situation reminds one of the old legend where King Canute attempted to hold back the tides of the ocean by setting his throne against them. The result is well known—the throne toppled over.

THE fixing of "just and reasonable rates" must function in a world of change, and must constantly readapt itself to the effect of those changes. It would, of course, be so much easier to think of dollars as something constant and unchangeable, but that unfortunately is not true, and has not been true during the last sixty years. The company must have an adequate *total* allowance in terms of the present buying power of money, because that is the only kind of money that is in use today. Such an adequate total return will in the end assure the two indispensables of (a) "just and reasonable rates," and (b) the ability to give and continue to give good and up-to-date service.

In the best interests of the public, of the utilities, and their customers, we must forget the mistakes of the 1920's, which are no longer with us, and return the utilities to popular favor, so that they can best perform their important public services. Thereby we can be assured of sound companies capable of continuing good service, *under fair and reasonable regulation.* Thereby we will assure the preservation of our private enterprise system.

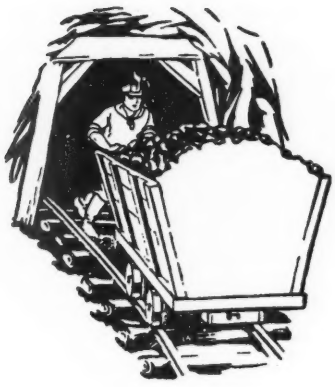
All Roads Lead to Rome (and Produce Traffic Jams, Of Course)

"THE *Roman city engineers have found that a car crossing Rome in the peak traffic hours averages seven miles an hour and that a driver must apply his brakes 23 times per mile. The city's bus company, also studying the matter, has come forward with a plan to seal off the center of the city . . . to all private vehicles. If this were done, says the bus company, people who wanted to walk around the city could do so in relative comfort and safety, and those who didn't want to walk could be carried in a fleet of new miniature buses capable of negotiating even the tighter and narrower of the old city's streets.*

"The plan has been received with less than full enthusiasm. Shopkeepers are against it. The City Fathers fear that such a system would mean a constant city fatherly headache over exemptions . . .

"Alas! says the Cultural division's bulletin—and alas! say we—the scheme seems unlikely of adoption, and the Roman authorities are instead considering other plans already tried and found wanting in other cities; the familiar and all-but-futile dodges of parking meters, a multiplication of parking rules and restrictions, conversion of more streets to one-ways, plans for underground parking lots, etc., etc., etc."

—JOHN O'REN,
Writing in The (Baltimore) Sun.



The Aluminum Industry Turns to Coal

For many years the aluminum industry sought out favorable hydroelectric sites as the choice location for its aluminum reduction plants. Recently, however, this industry has been spotting the location of underground "fossil" fuel reserves and planning the construction of its new adjacent reduction facilities.

By HENRY G. SCHMIDT*

My company is dedicated to the future requirements of the electric utility industry. Therefore, it is a source of great satisfaction to us to witness the almost unbelievable growth in power requirements of the United States since the end of World War II.

This growth is a reflection of the expanded and expanding demand for energy created by what some writers and commentators have come to call "The Second Industrial Revolution." One major example of this boom in electric power demand—and one with which we are directly concerned here—is the nation's aluminum reduction and fabrication industry, now undergoing a tremendous expansion program under the impetus of our growing economy.

Aluminum production needs great quantities of electric power for mass output. It must have this electric power on an uninterrupted basis. Also, this power must be produced at the lowest possible cost. Coal today offers aluminum producers their cheapest and most available source of fuel for the generation of power. As a result, three of America's newest and largest primary aluminum producing plants

* President, The North American Coal Corporation. For additional note, see "Pages with the Editors."

are being built in the Ohio valley, as close as possible to low-cost coal reserves.

In two other instances aluminum producers have chosen lignite—a low rank coal—as a low-cost source of fuel for power. Aluminum Company of America, in 1952, built a plant at Rockdale, Texas, to utilize lignite. Only a few weeks ago Reynolds Metals Company took up an option on a 4,000-acre tract of Wyoming land underlain by substantial lignite reserves.

BUT even as the aluminum industry expands to meet present market demand, it is looking ahead to a still greater future, in which coal is certain to share as the source of fuel for electric power. It is, of course, true that aluminum production in 1956 caught up with demand for the first time since World War II. Nevertheless, aluminum producers look on the present situation as extremely favorable to their plans for broadening the market for aluminum, reasoning that a surplus of the metal will permit development of new large-scale uses. Consumption of aluminum in automobile manufacture, for instance, has risen from an average of around 29.6 pounds per car in 1955 to an estimated 38.1 pounds in 1957 models. All-aluminum engine blocks and radiators have been suggested for the future. It is obvious that no crystal ball is needed to appreciate the size of the market for aluminum that such developments would generate. Aluminum companies also anticipate a growing share of the general industrial market for raw materials, particularly in construction, public transportation, and electrical markets.

A 70-year march of progress in the aluminum industry has taken producers back to the valley where it all began in the 1880's. The aluminum reduction process was originated at Oberlin, Ohio, in 1886.

At Pittsburgh in 1888, aluminum manufacture started. From the very beginning, the need for low-cost fuel was paramount. As a matter of fact, the industry's first move, from Pittsburgh to New Kensington, Pennsylvania, was dictated by the availability of coal at a cost below the price paid for the gas originally used as a fuel for power by the Pittsburgh Reduction Company—predecessor of Aluminum Company of America.

THIS never-ending search for low-cost fuel led directly to selection of hydroelectric power for the earliest mass production of aluminum. Hydro-based aluminum production traces back to 1903 when Aluminum Company of America built a plant at Massena, New York, to take advantage of electric power generated from the waters of the St. Lawrence river. After 1903 and prior to 1950, only one modern aluminum plant was designed to use electric power generated with fossil fuel. The sole exception was the Jones Mill, Arkansas, plant of Reynolds Metals Company, built in 1942, which used electric power generated with gas. All of the others used water power as a prime source of energy.

But demand for hydroelectricity—from other industries as well as aluminum—has outstripped such facilities and this, plus higher prices and a questionable supply situation for natural gas, has forced aluminum producers to search for a substitute fuel at lower cost and in more stable supply.

Coal was the only answer, if rising de-

Aluminum Executives Turning to Coal-power Supply

"... in anticipation of future aluminum reduction plants based on the generation of power from coal, Reynolds Mining Corporation has acquired control of a vast deposit of subbituminous coal adjacent to Lake DeSmet, Wyoming. This coal has an average thickness in excess of 100 feet lying relatively near the surface. . . . Lake DeSmet, which is immediately adjacent to the coal deposits, will provide sufficient water for condensation to enable the company to build a series of steam-generating units over a period of time.

"Reynolds Metals Company has also acquired large coal deposits adjacent to the Green river near Henderson, Kentucky, where power can be used for a reduction plant on navigable water."

—WALTER L. RICE,
Vice president, Reynolds Metals Company.

* * * *

"THE Ravenswood reduction plant, to be located immediately adjacent to the new $96 million sheet and foil rolling mill now under construction, will be connected by economic water transportation with our alumina plants and our Jamaica bauxite mines, thus providing a direct flow of raw material. Overall freight savings will be substantial, and will result in a highly favorable combination of transportation and power cost at the new plant. . . . Perhaps the most important factor of all is the assurance of an adequate long-range supply of economical power derived from coal.

"Electric power for the Ravenswood reduction operations will be supplied by the Ohio Power Company, an operating subsidiary of the American Gas & Electric Company. The power contract with the Ohio Power Company provides for the availability of 450,000 kilowatts for a period of forty years."

—D. A. RHOADES,
Vice president and general manager, Kaiser Aluminum & Chemical Corporation.

* * * *

"THE scarcity of good water power sites after World War II caused the industry to turn to gas as a source of electric energy. . . . As natural gas rose in price it became less attractive as a source of power. This development, plus the fact that freight rates have risen faster than power costs, led the industry to turn to steam power from coal. Three plants are now being built in the Ohio river valley as producers believe that the savings in transportation which result from having the metal produced nearer its markets, will more than offset the higher costs of coal power. In fact, 72 per cent of the new smelting capacity now being constructed will be powered by coal, with water accounting for 22 per cent and gas 6 per cent."

—LAWRENCE LITCHFIELD, JR.
Vice president, Aluminum Company of America.

mands for aluminum were to be met successfully.

The position in which aluminum producers found themselves shortly after World War II was most clearly defined by Arthur F. Johnson, mining engineer for Olin Mathieson Chemical Corporation, a recent entry into the ranks of aluminum makers.

"When delivered costs are considered," Johnson said nearly three years ago, "and when full account is taken of the newest techniques of mining bituminous coal and utilizing it to make electric power, one arrives at the inescapable conclusion that coal has emerged as the economic answer to American aluminum production."

In a sentence that summed up the Ohio valley's importance as the new center of aluminum production. Johnson also stated that "Power from coal can cost less than new power from natural gas, hydroelectric development, or atomic energy. Moreover, power from coal is available near the market center of the U. S."

"THE immediate reason for the aluminum industry's present rush to coal," he later told the 1956 annual meeting of Bituminous Coal Research, Inc., "is the fact that utilities can now offer the producers firming-up power in sufficient quantities, and over a long enough period of time to allow them to amortize the huge investments at a reasonable cost per pound of aluminum. Firm power in the Ohio valley can be made for 3.5 mills, of which the fixed charges constitute about one mill. When allowance for freight is made, 3.5-mill power makes cheaper metal in Ohio than 2.5 mills in Oregon or Washington."

Only last June this view was echoed by *Fortune* magazine in a report on the present-day industrial trek to the Ohio. The magazine said that "Valley sites were dictated for a third of the $7.5 billion investment . . . because of a single commanding reason: coal."

Olin, in partnership with Revere Copper & Brass Company, is building a reduction plant at Clarington, Ohio, across the river from Cresap, West Virginia. At the latter location a new coal mine is being built to supply fuel for a new power plant close by which will serve the aluminum plant. Aluminum Company of America is building a plant down river at Evansville, Indiana, and Kaiser Aluminum & Chemical Corporation is constructing a reduction plant and rolling mill at Ravenswood, West Virginia. Total estimated cost of these facilities is $431 million and the anticipated annual output of primary aluminum 490,000 tons.

Actual Ohio valley aluminum production began on January 16th when Kaiser rolled its first sheet, an historic occasion. D. A. Rhoades, Kaiser vice president and general manager of the Ravenswood plant, said publicly that "coal is the most economic source of electrical energy for the production of aluminum when located close to major markets and a direct transportation route for raw materials." This conclusion led the firm to its Ohio river site.

CITING the aluminum industry's plans to double its present 1.7-million-ton annual capacity by 1970, the Investment Bankers Association of America late in 1956 in a study of the bituminous industry said aluminum manufacture "in the future may consume as much as 10 million tons of bituminous coal per annum."

"As large hydroelectric sites are extremely scarce," the IBA went on, "the bulk of the electricity required for this expansion of primary aluminum capacity probably will have to come from bituminous coal."

I find myself in agreement with Philip Sporn of American Gas & Electric concerning the significance of primary development such as that now taking place in the Clarington, Ohio - Cresap, West Virginia area. An added demand for electric power will develop from other industries attracted by the original aluminum plant.

Additional power demand is anticipated not only as a result of expansion of Olin-Revere operations, but from satellite industries, as well as from others in no way connected with aluminum but which will require power in quantity.

IF I sound unduly optimistic about the future of my industry's relationship with generation of electric power, it is because I have reason for optimism. The electric utility industry's forward-looking, progressive management has long been recognized. This same progressive outlook prevails today in the bituminous coal industry. Nothing is being left undone that will assure to the electric utility industry an unfailing source of low-cost fuel.

Optimism also rests on the fact that electric utility industry leaders themselves expect construction in 1957 to rival the record year of 1956 and the record of the past ten years to be doubled in the next decade.

TALKING about the future, in reviewing 1956 results, Donald S. Kennedy, president of the Edison Electric Institute, said that the 10-year annual average of construction expenditures of $2.3 billion will nearly double to around $5 billion a year by the end of 1966.

In the same favorable vein, the IBA report called the over-all rise in electricity consumption "the most significant trend in coal consumption, both for the past and for the future" and said it reflected both the growth in actual consumption of electricity and the rise in coal's share of the fuel market, two trends which "can be expected to continue."

Such is the feeling we have in our own company. Our belief in the bright future of the electric power industry was expressed in my own statement last May when, in announcing a long-term coal supply contract between North American Coal and Pennsylvania Electric Company, I said it was "in conformity with North American's policy of dedicating its future to the requirements of the electric utility industry."

Tax Dollar Forever Lost

"THE individual who invests $100 in private enterprise owns a property which is expected to pay dividends, and which can be turned back into cash. His money goes to work to create new wealth, new jobs, profit for further investment, and also new source for taxes. But look at the $100 this individual pays in taxes. It is forever lost to him. It creates—only more government which calls for more and ever more taxes."

—EXCERPT *from Duke Power magazine.*

Sharpening the Utility Nose For News

Scarcely a day goes by in the operation of any public utility company which does not produce some event or development which might be called "newsworthy" by an experienced journalist. These things happen among utility employees who are invariably conscientious people, hard-working at their jobs, and understandably not constantly on the watch for "readable copy."

By FREDERICK W. LANGBEIN*

THERE is a classic newspaper story about the cub reporter who was sent out to cover a neighborhood meeting. His city editor was initiating him in the mysteries of news, how to spot it, what to do with it. He came back saying, "There isn't any story—there wasn't any meeting."

"Didn't anything happen?" asked the editor.

"No—before they could get started the whole thing broke up in a fight."

This story has heart appeal for every editor of an employee magazine, because he has the eternal job of beating the bushes among people who have little news instinct. Employees in an organization like a telephone or other utility company have their own special work to do, with a technique in itself, and can hardly be expected to have a reporter's sense for what will interest the public. This is an entirely different trade, and takes long training. When the editor of an employee magazine asks people down the line, "What's new in your department—what goes on?" they

* News service manager, Chesapeake & Potomac Telephone Company, Washington, D. C. For additional personal note, see "Pages with the Editors."

generally answer, "Nothing seems to be happening around here, Mister."

For example, one of our installers was working in a residence district when a little girl fell and broke her leg. Our man had had first-aid training. While they were waiting for a doctor he applied a temporary splint, making her more comfortable, and reassuring her mother. This was something he had been taught to do, as part of his telephone job. An ambulance came, the little girl was taken away, and our man went back to work, thinking no more about it.

That this incident might be interesting to newspaper readers did not occur to him. Often, he had read similar news items, but he had no idea of how it got into the newspapers. He said nothing to his supervisor, and it was only later that it came to our attention through neighborhood gossip. By that time it was cold for immediate news purposes. An account was printed in our employee magazine.

AGAIN, one of our downtown exchanges received a worried call from a bus terminal, asking if anybody there spoke foreign languages. It seems that a young woman passenger, arriving from Florida, speaking no English, had not been met by friends as she expected, and was lost. She could not make herself understood as to her friends, or destination.

One of our operators in that exchange spoke to her in Spanish over the phone, and that was her language. She had flown to Miami from a South American country and taken the bus to Washington to attend a church school. Members of the school had arranged to meet her, but she was ahead of schedule, and so virtually stranded in a strange city, among people anxious to help her, but up against the barrier of language.

Our Spanish-speaking operator went to the terminal, reassured her, got in touch with the people who were to have met her, and everything turned out happily. Everybody went back to work, thinking no more about it. Several weeks later we heard what had been done, through an outside channel, somebody saying, "Well, those telephone operators are certainly well trained!" and relating the experience. Again the incident was cold for newspaper purposes. While fresh, it might have made an interesting item of the kind that editors seek for the contrast they give the regular routine news. It was utilized in our employee magazine.

Happenings of this kind have values for a company and its employees. It shows by actual happenings that a corporation, no matter how big, is made up of people who will act as people in emergencies, and for the public interest. The printing of such news strengthens employees' pride in the organizations they work in, and alerts them to be ready for action should such emergencies come to them.

HOW can employees be led to report such occurrences? How can they be given an awareness of what makes news, recognizing the human interest in whatever may occur in their regular work? How can operators, installers, trouble shooters, and field crews be prompted to act on the five "W's" of news, Who, What, Where, When, Why—and give this information in, perhaps in a matter of minutes, to the department that will interpret its value and report it to newspapers?

Some years ago one of our Washington

operators spent four hours on one long-distance call, locating an Army officer whose small daughter had suddenly been stricken with polio. In another instance an operator located a five-year-old child's parents by telephone, in the meanwhile reassuring her. Such instances are often newsworthy for the press associations and radio broadcasts. But they do turn up indirectly because the telephone people involved do not understand news value.

A couple of years ago we got the idea that the "nose for news" might be cultivated among our managers, chief operators, wire chiefs, and like executives, and among employees, too. We set up a committee to study news gathering by the case teaching method used in law, business, and other education. We called it our Interdepartmental Transmitter and Press Committee, which is not so formidable as its title when its work is understood. It is still experimental, but has achieved results of the kind we expected, and we are confident that with experience we will improve those results.

FIRST, we have our news service in Washington and its suburbs in Virginia and Maryland. Several times a year our news committee goes out into one of these areas and conducts a committee session on news, using "cases" from our own department, and various other sources.

Then, there are the Chesapeake & Potomac companies concerned with the Bell organizations in Maryland, Virginia, and West Virginia, which have their separate news services and public relations activities. They supply us with many cases.

Third, there is our employee magazine, issued every other month, read by the total 36,000 Bell employees in those areas. Its editor, Carl H. Claudy, Jr., has editorial co-ordinators in the District, Maryland, Virginia, and West Virginia. We find cases in this magazine, and from time to time furnish leads for articles that develop in our news work.

Finally, we take cases from the feature news service of the American Telephone and Telegraph Company, which covers the country, gathering and reprinting outstanding Bell items from every locality.

Following the principle of living by taking in each other's washing, we select news stories of a character in keeping with our own conditions, and analyze them to see how they originated, and were handled, and whether they suggest possible news sources in our own organization. The cases we use here are selected from these various sources.

AN excellent teaching case was that of the photo of a cloth banner which

¶ "EMPLOYEES *in an organization like a telephone or other utility company have their own special work to do, with a technique in itself, and can hardly be expected to have a reporter's sense for what will interest the public. This is an entirely different trade, and takes long training. When the editor of an employee magazine asks people down the line, 'What's new in your department—what goes on?' they generally answer, 'Nothing seems to be happening around here, Mister.'* "

came to the news service as something that might be of interest for our employee magazine. It was just a still-life shot, a banner with an inscription on it, but no people around, not even a background.

News has to be something that interests people. People are interested in other people. The best news is about people doing something out of the ordinary, not always people or episodes of front-page interest, but perhaps of real interest to a group.

Behind this photo of a banner was a story of people interesting to telephone people. To make it newsworthy it was necessary to develop that story.

RETIREMENT is always interesting to people in our business, or in fact any business organization these days that provides for retirement. Employees like to dream about it, and hear about oldsters who have reached it.

This cloth banner had been presented by Washington telephone people to retired telephone people in St. Petersburg, Florida. That city had nearly 300 Bell retirees living there, and they had formed an association to get together, play cards, pitch horseshoes, go on picnics and cruises, and look after the sick. Washington telephone women had heard about it, and procured this banner to be sent as a testimonial, and had it photographed. These women belonged to the Alexander Graham Bell chapter of telephone pioneers. Sending the picture was as far as they had developed the news possibilities, and for that we were appreciative, because it furnished a real news lead, and it was up to us to carry it further. The way this was done made a case instructive to those attending one of our committee sessions.

FIRST, we got in touch with the St. Petersburg association, asking for further information. It developed that the organization had started with a meeting of a handful of interested retirees, a dozen years before, and that getting together had been found such a good idea that others joined. We asked for a more interesting picture, and the St. Petersburg chamber of commerce got interested, as a matter of community pride, and a meeting was arranged, at which several dozen retired Bell people sat in for a group photo.

The story was of local newspaper interest, and made an excellent article for Bell employee magazines over the country, which have a syndicate for such features.

All growing out of a photo of a piece of cloth, and illustrating what's news, and what to do with it when you find it in even this unpromising form.

Also, this case furnished a good lesson in the "family" news of an organization, contrasted with newspaper news.

MANY employee magazines publish items about weddings, births, retirements, promotions, hobbies, and the like, interesting to people who work together, know each other. Such items impart the family feeling in an organization, make people realize that they work with worthwhile folks.

However, these items are of no interest whatever to general readers of newspapers, and in our own employee magazine they are not used, except when of general scope, because our employees are scattered, and the family news of suburban Washington in Virginia would be of no interest to employees in Maryland.

Promotion Opportunities

"TODAY, success is attained in a large organization, like a utility company, by different methods, and by a great many more young men and women. Since war's end, many telephone companies have approximately doubled their subscribers and employees. It has been necessary to recruit new employees, and to train and promote those in the service to supervisory and management positions, to keep pace with expansion. Every year, hundreds of our employees rise to responsible executive positions, from beginners' jobs."

STILL, some items of this kind have wide family interest, and even general news interest for local papers. A telephone employee is building his own house—there is interest in how he does it. Another employee may have taken an unusual vacation, and brought back good snapshots. A retiring employee may have photos of the telephone setup from the time he went to work for the company, of home-town interest—or he may have been a collector of old telephone apparatus that brings up memories of other days to other people.

What we study in our sessions is the detection of and development needed for elusive news clews.

For example, the editor of the *Transmitter* found family interest in a story from Virginia City, the old western silver town of Mark Twain's day. Once it had 20,000 inhabitants, busily mining the famous Comstock lode, but today there are only a few hundred residents. It was proposed that their 77-year-old telephone exchange be converted to dial; this was one of the first 20 exchanges in the United States. Their reason for refusing modernization was, that the old Nevada

town's income nowadays comes from tourists, and their old telephone system was considered part of their ghost-town atmosphere.

The *Transmitter* printed a page feature article about the old town, illustrated with a woodcut of the *Territorial Enterprise*, Nevada's first newspaper, today published as a tourist souvenir.

What family interest could such a far-off story have for telephone people in and around the nation's capital?

Why, the president of our company, J. B. Morrison, was born in Virginia City, and this article furnished an intimate touch with him. Reading the proof he laughed and said, "I guess things haven't changed much out there since I was a boy!"

Family news of interest to people in an organization is often gathered like the neighborhood items in country weeklies. The editor will find correspondents in the various neighborhoods, or company departments, and they send in the gossip. By case studies of news, our supervisory people learn how better to locate such items, and in turn train employees in their departments to find and report them. It is not necessary for any of them to write, other than the bare facts. Our news service will attend to that, or the local newspapers that want to use the stories.

A DIFFERENT kind of news, also originating among employees, is that of general interest to the newspaper-reading public. This is discussed at our committee sessions, by cases, from which supervisory people learn how to look for it, recognize it and make it available to newspapers that will be glad to have it—sometimes the metropolitan press, even the news associations, but more often to local and regional papers.

One of the commonest newsworthy happenings in telephone service is the case of the operator or outside worker who performs some act of helpfulness for persons in distress. Such cases are frequently published in the newspapers, and would seem the easiest to find and report. Actually, they are among the hardest, often escaping notice in our organization until some subscriber writes a letter, commending a humane act by a telephone employee whose identity was not ascertained at the time.

The case of the Washington operator whose ability to speak Spanish helped a bewildered traveler is a good illustration. Nobody's life was saved, no heroic act performed, the operator went back to her job, and the incident did not come to the attention of anybody with news sense.

Or, if reported, the incident may require building up.

A TYPICAL case was that of a switchboard operator in Arlington, Mrs. Eleanor Rowe, who plugged in one night and heard only a woman's voice mumbling and spelling out a five-digit number. She was able to make out the number as that of the police department, had the woman's phone traced, called the police, and also the woman's husband. This woman was desperately ill, and the operator's intelligent handling of the call perhaps saved her life.

The first intimation had was a letter written to Mrs. Rowe by the chief of police, commending her for her action, and saying that the police department set a high value upon telephone people in the furtherance of public safety.

What was needed there was a little dramatization, something that could be photographed. We asked the chief of police, and an officer who had figured in the incident, to come to the exchange and present the letter to the operator, and this made a news picture.

WHILE many stories of this kind originate on switchboards, outside employees are mixing more widely with people in homes, offices, and on the highways, and have many opportunities to help in emergencies. Rescuing a child's kitten from a tree may not appear heroic to the plant foreman who is able to do it with truck equipment, but it is definitely a human interest occurrence, and reflects credit on telephone people.

In one of our metropolitan centers, some years ago, an appealing story came to light.

Telephone men and women are often touched by cases of needy families, and help with food or money, but this instance, that was heard of in a roundabout way, was that of a plant foreman, working in poor neighborhoods, who, hearing of needy families, had made a practice of taking Christmas baskets to his own list. He paid for them himself, and took them around as a friend. That was his hobby, or heart interest, and of course he did not want it to become known.

Business office employees have their own kinds of contact and report stories, such as ingenious devices contrived by plant and commercial employees to aid crippled, bedridden, blind, and other handicapped subscribers use telephone service.

What we try to develop through supervisors is a realization among all employees that their little extra out-of-the-ordinary experiences are worth reporting to chief operators, wire chief, plant supervisors, and managers, for appraisal by news service and development where newsworthy. It is important, however, to let employees understand that such incidents may not be used. The reported incident may involve personal publicity, and, if not used, may cause disappointment and indifference in future. Newspaper editors, of course, are the sole judges of news value.

EACH issue of the *Transmitter* carries several pages of short items about telephone people, digested from newspapers in our territory, some of them from metropolitan dailies, but the majority from local and regional papers. These "C & People in the News" paragraphs may relate only to telephone people speaking at

¶ "WITH *the vast trek to the suburbs now under way, outlying newspapers have become of great importance. Suburban population is increasing four times as fast as city population. Adding up the circulations of local newspapers in each of our outlying areas, we find that they equal in readership the combined circulations of metropolitan dailies. In our committee meetings we stress the importance of reporting news leads to these papers, and, besides our central clipping work, have regional supervisors read and clip them.*"

meetings, being elected to organization offices, participating in community activities, but they are of value in showing telephone people as part of their communities.

With the vast trek to the suburbs now under way, outlying newspapers have become of great importance. Suburban population is increasing four times as fast as city population. Adding up the circulations of local newspapers in each of our outlying areas, we find that they equal in readership the combined circulations of metropolitan dailies. In our committee meetings we stress the importance of reporting news leads to these papers, and, besides our central clipping work, have regional supervisors read and clip them.

READING their local newspapers, supervisory people find that they have regular human interest features, like the "Chosen Man of the Week" articles published in the *News Journal,* of Radford, Virginia. The chosen person is selected for his work, or hobbies, or community activities. It was thought that a Radford installer-repairman, John T. Ball, might be a candidate for this feature, and he was; and the paper's feature writer, Martha Singo, wrote an excellent interview.

John Ball was a former "Golden Gloves" champion, but that had little interest in itself, after twenty years. Only, he had never lost his interest in sports, and all these years had been a sports leader among young people, and had constructive ideas.

The youngsters, for one thing, needed some kind of agency to help them find part-time work. Sports take money. They are willing to work for it themselves, but between the ages of fourteen and eighteen they must secure special permits to work, from the local employment service, and such permits are issued for full-time summer jobs. If the boys and girls could register for gardening, house repairs, lawn mowing, baby sitting, and so on, they could earn the money they needed for sports equipment and clothes—a good thing for them and for the community. That was the gist of John Ball's story, but he is also the holder of a bronze Vail medal for lifesaving, having carried a helpless man out of a smoke-filled room as an incident in his daily work.

ANOTHER community activity story was that of a young cable splicer, H. Lynn Harris, in Portsmouth, Virginia, who had an interest in "hot rod" youngsters. Harris himself was keen about tinkering with cars, and knew that a crazy craving for speed was not the sole motive of the "hot rodders." They had a constructive interest in mechanics. So, after mulling over the idea for several years, he got some of the boys together in a "Cavalier Auto Club," to meet one night a week, go into car mechanics, and train themselves in correct driving and safety rules. This club now has about forty members, boys from seventeen upward, and has worked out a 10-point checking system for determining whether or not a car is mechanically safe to drive—mechanical defects cause a very large proportion of auto accidents.

In lighter vein, yet interesting as a feature to the *Rappahannock News,* of Washington, Virginia, were the trouble-shooting experiences of John R. Brown, a Virginia exchange manager. He related incidents to show what telephone people sometimes have to go through to render

Employees' "News Committee"

"A couple of years ago we got the idea that the 'nose for news' might be cultivated among our managers, chief operators, wire chiefs, and like executives, and among employees, too. We set up a committee to study news gathering by the case teaching method used in law, business, and other education. We called it our Interdepartmental Transmitter and Press Committee, which is not so formidable as its title when its work is understood. It is still experimental, but has achieved results of the kind we expected, and we are confident that with experience we will improve those results."

service. One day, finishing a job atop a pole, he looked down and saw that he had an audience—a big farm dog, probably lonesome, eagerly waiting for him to descend. "What would you have done?" he asked the newspaper interviewer. To a telephone lineman the solution was simple —he tapped the dog owner's telephone from the top of his pole, explained the situation, and the dog was taken away, undoubtedly disappointed.

There was the mysterious, recurring trouble on a rural party line that eluded all efforts to detect it electronically, until through observation it was discovered that one of the subscribers made a practice of drying wet diapers on the phone cord. Such stories definitely strengthen customer relations, because they are readable. The employee who has such experiences to relate, amusingly, is newsworthy.

With such active expansion of telephone service, and in inventions and new apparatus, the engineering departments are constant sources of news and newspaper features. Engineers take a keen interest in news-gathering methods, and very often give complex technical subjects a human slant.

Typical was a relocation project at Seven Corners, Virginia. Relocations tend

to be dry descriptions of so many cables, conduits, and pipes lifted onto temporary structures while grades are being separated, and how they were all put back without interruption of service.

One of our plant engineers, Henry J. Gibson, in charge of this job, wrote an article for the *Transmitter* which was reprinted by regional newspapers. Seven Corners is a traffic circle through which thousands of motorists drive daily, to and from work, in Washington and also Virginia points. Two main highways crossed there, and congestion had become acute. Our engineers made a one-stage operation, instead of the usual two phases, by "ground moling" underneath the circle. They employed a cutting head, similar to those used for driving big tunnels, to bore a cable conduit. This eliminated a lot of nuisance work, such as the placing of temporary structures on private property, reduced the hazards of service interruptions, kept annoyance to motorists down to minimum, and saved time. Incidentally, there was a pleasant cost-sheet aspect for the accounting department, for it was a less expensive job. The article included illustrated photos of equipment, and diagrams of the work superimposed on air photos. It had a big readership, because almost everybody in that vicinity drives through Seven Corners.

ANOTHER engineering feature that turned out well, and made a case for study and adaptation, was an interview for National Engineering Week, given to William Bien, the business editor of the *Richmond News Leader,* by the chief engineer in Virginia, Wesley E. Vellines, Jr. These special weeks create many opportunities for articles that newspapers are glad to have, when utility executives are news conscious, and explore the organization for features and people in keeping with the current interest.

Mr. Vellines took the boy who has a tinkering complex, and out of his own experience indicated what might be done with it. If he would study engineering principles along with his tinkering with machinery and electrical apparatus, he would be qualifying for a career in telephony or other electronics. If he would also study people, getting along with them as working associates, and employees, and customers, and the planning and management aspects of his work, he would find himself in harmony with the engineering trends of today. For a large organization like a telephone company is looking for such individuals, and has the jobs and resources to help the individual develop his abilities.

Case studies of "success stories" are a very fertile source of news leads, both for the family news of the organization, and general press features.

The old rags-to-riches rise of the poor boy, who finally marries the boss' daughter seems to be merely comical to this generation of young people. Last year, a national magazine that had thrived on that phase of success ceased publication for lack of reader interest.

TODAY, success is attained in a large organization, like a utility company, by different methods, and by a great many more young men and women.

Since war's end, many telephone companies have approximately doubled their subscribers and employees. It has been necessary to recruit new employees, and

to train and promote those in the service to supervisory and management positions, to keep pace with expansion. Every year, hundreds of our employees rise to responsible executive positions, from beginners' jobs. In Horatio Alger's day, the new boy swept out the office. With us, he goes to work in a field crew, or becomes an installer, a cable splicer.

Presently, promotion comes to some of these beginners because they have earned it. The cable splicer takes a college extension course in electronics; the young engineer cultivates people; the installer demonstrates ability to plan and manage work, keep a crew busy and happy. The company offers many kinds of training to such ambitious employees, and they are screened for promotion on their records. Their personal experiences often make interesting reading for other ambitious employees, and when of newspaper caliber, reflect the character of the company and its treatment of employees.

THEN, there is a keen public interest these days in what has become known as "automation." Everybody seems to have a different conception of it, some maintaining that it is just an orderly part of the well-known industrial revolution that has been going on for 150 years, and others regarding it as a revolution and a menace. When analyzed, the common interest is, "What will it do to my job?" and here the telephone industry has something to say that is reassuring. Our scientists and engineers have been developing automatic equipment for many years, and today have in hand such advances as direct distance dialing. The public wants to know what is becoming of telephone jobs, when it dials more numbers, gets faster connections without operator assistance, and page bills made out from punch marks on tape.

"WHAT becomes of all the telephone girls?" is the natural question, and the answer is that ever since dialing was introduced following the first war, nobody has lost a job in telephony on account of automatic equipment. With us, there have always been more jobs to fill, and more interesting jobs to work at.

"Do you know where we can get some more girls?" is the reply.

News originates among people.

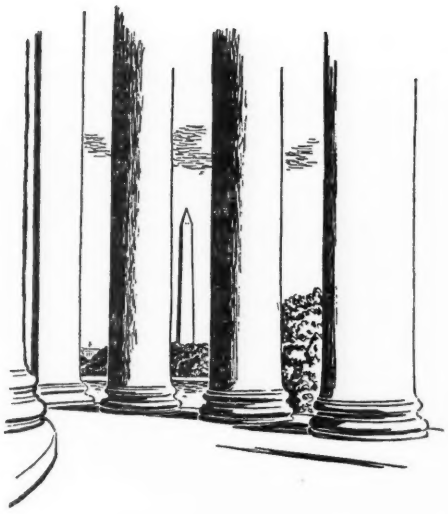
Our business employs more people than any other public service utility, and more than most other industries.

By coaching telephone people to find out what cooks, and report it for workmanlike handling, we get a great deal of news that is valuable to us in a great many ways.

"CERTAINLY, *I give full measure to the importance in human affairs of the rôle of governments and of their necessary functions in economic development. Many things only public authorities can do. Nevertheless, I believe deeply that the most dynamic force in producing a better life for people, and a more worthy life, comes from the initiative of the individual—the opportunity to create, to produce, to achieve for himself and his family—each to the best of his individual talents.*"

—ROBERT L. GARNER,
President, International Finance Corporation.

Washington and the Utilities



FPC Favors Nez Perce Dam

CONSIDERABLE surprise was registered in some quarters when the Federal Power Commission staff came out with a new, although hardly original, proposal for developing water resources on the Snake river and in the Pacific Northwest. The staff recommended that an application for private construction of a hydroelectric project at the Mountain Sheep-Pleasant Valley site on the Snake in Idaho and Oregon be denied. Instead, said the staff report, flood-control problems would be more efficiently handled by construction of a high dam at Nez Perce on the Snake, just below the confluence of the Salmon river.

The staff said it agreed with the Army Engineers that a high dam at Nez Perce, plus the Brownlee project now under construction by the Idaho Power Company, would provide all the additional storage for flood control and other purposes necessary in the Snake river basin. The high Nez Perce dam would be feasible for either private or federal construction, the staff added, in recommending that Pacific Northwest Power Company's Mountain Sheep application be denied without prejudice to a renewal of its application for construction of a Nez Perce dam.

The big argument against Nez Perce is that it would probably kill the area's salmon fishing industry. Otherwise the staff report could provide ground for some agreement among federal, private, and public power interests on Snake river basin development. Aside from the fish problem, all parties seem to be in agreement that the Nez Perce site is better than either Hell's Canyon or Mountain Sheep-Pleasant Valley for a high dam. Senator Morse (Democrat, Oregon) was preparing a bill to authorize federal development at Nez Perce on condition that the fish problem is solved. Agreement on a Nez Perce project might well end the confusion that now exists on Snake river development and provide an acceptable alternative for both the proponents of a federal Hell's Canyon dam and the Interior Department.

THE staff report's comment on the fish passage problem made vague references to recent accomplishments of biological and engineering experts and said

that this "justifies confidence in their ability to solve reasonably soon a satisfactory means of passing downstream migrants at high dams such as Nez Perce." Inasmuch as this has never been done before and the FPC staff has no expert background on such matters, observers were inclined to regard such comment as expressions of hope, and to regard Senator Morse's bill as a maneuver against private company licenses, rather than legislation expected to be enacted.

Pacific Northwest's proposed Mountain Sheep development would include a 255-foot high dam creating a reservoir extending about 20 miles to the proposed Pleasant Valley development. The Pleasant Valley development, with a 534-foot-high dam, would create a reservoir extending 34.3 miles upstream to the tail-water of Idaho Power Company's Hell's Canyon dam site. The developments would be located in Idaho and Adams counties, Idaho, and Wallowa county, Oregon.

The staff brief, of course, does not purport to have any authority in itself, but is simply in the nature of pleading, just like other counsel briefs. A decision, in the first instance, still remains to be handed down by FPC Presiding Examiner Edward B. Marsh, and after that the commission as a whole may well rule on the matter.

MEANWHILE, Senate committee hearings on bills to authorize a high federal dam in Hell's Canyon on the Snake river failed to throw any new light on the merits of the proposal. Members of the government power bloc in Congress used the occasion, as expected, to lambast the administration's "partnership" power policy. Opponents of Hell's Canyon appeared to be sparring in anticipation of final action by the U. S. Supreme Court. The court is expected to rule soon on whether or not to review a lower court order upholding the FPC's decision to license Idaho Power to build three low dams on the Snake, one in Hell's Canyon.

Those who oppose the federal project in Hell's Canyon got some indirect but impressive support from an Army Engineers' witness. Senator Dworshak (Republican, Idaho) drew the admission from Gordon H. Fernald of the Army Engineers' Portland, Oregon, office that a high dam in Hell's Canyon would be of little or no use in flood control. Fernald said the recent floods in the Pacific Northwest all showed a need for storage dams on rivers other than the Snake. On the Snake river itself, Fernald said he had never heard of any flood-control problem. Hell's Canyon proponents have made much of the project's flood-control features. Dworshak, commenting on Fernald's testimony, said it revealed the deceptive nature of propaganda used by the Hell's Canyon project advocates attempting to shove their proposal through Congress on the basis of false or extravagant claims.

REA Developments

MOVES in Congress to boost interest rates charged by the Rural Electrification Administration on loans to electric and telephone co-operatives may turn on whether there will be full-scale investigation of the administration's financial policies. The House was slated to consider House Resolution 85, introduced by Representative Patman (Democrat, Texas), to authorize the House Banking and Currency Committee to conduct a full investigation of monetary and credit policies, with particular reference to "the impact of changing interest rates on economic growth, competitive enterprise, financing necessary public facilities, and inflation." Passage of that resolution would probably

delay any real movement to raise REA interest rates at this session of Congress, as strongly hinted in President Eisenhower's Budget message.

There is still a good chance, however, that the administration will throw its full support behind a bill requiring REA to charge rates corresponding to those paid by the Treasury on its borrowings. This bill would result in an increase from the present 2 per cent fixed rate to about $3\frac{3}{8}$ per cent, according to the Budget analysis of the cost of such money borrowing to the government. Such a bill already has been introduced by Representative Hiestand (Republican, California). It would also require that REA borrowers pay for administration and other REA expenses in connection with handling their loans. Hiestand's measure (HR 4781) may even become the administration's bill.

Moves to raise the interest rate on REA loans to electric and telephone rural co-operatives drew sharp attacks at the recent annual convention of the National Rural Electric Co-operative Association in Chicago. Admitting frankly that the 2 per cent loans from REA no longer cover federal cost of borrowing money, NRECA's answer is that all interest rates should be lowered, thus ending the "tight money" situation. A resolution pushed through on the first day of the convention assailed the administration's hard money, high-interest policy, and urged Congress to conduct an investigation.

Spokesmen at the convention claimed that the government has made a $47 million profit on REA loans since 1935 and that it has only been in the past three and a half years that the interest rate has been deficient. Next to interest rates, protection of "territorial integrity" seemed to be of greatest concern to co-op delegates to the convention. Co-op leaders served notice that they will fight to keep private utilities from "pirating" their member customers by seeking state legislation to prevent "raids." Several of the so-called "antiraiding" bills have made their appearance in state legislatures.

Interest rates to one side, REA ought to have plenty of money to lend for the next fifteen months or so. Budgetary revisions are likely to give REA a $200 million extra for additional loans to electric co-ops (not for telephone loans). The money was transferred to REA from funds originally made available to the Farmers Home Administration in the 1957 fiscal budget. In explaining the transfer, the President said that a recent survey of borrowers' needs showed that applications for electric loans would total about $453 million in fiscal 1957. Original estimates for 1957 put the figure at $270 million.

The proposed transfer of authorization would make it possible for REA to meet the increased need for electric loans in 1957 and provide a margin to continue the higher level program into 1958. As a practical matter, it is expected that $100 million of the transfer funds will be earmarked for loans in fiscal 1958, and would be in addition to the $179 million asked for in the new budget, plus a carry-over from 1957. An increase in the number of generation and transmission loans appears to account for the greater need for loan funds.

The Idaho Melt Down

A 1955 "melt down" of an atomic power reactor's uranium core was described at recent Atomic Energy Commission hearings by Dr. Norman Hilberry, deputy director of AEC's Argonne National Laboratory. The testimony was given at the

Power Reactor Development Company hearing into safety considerations of the $43.2 million fast-breeder reactor under construction at Monroe, Michigan. Hilberry described events leading up to a reactor core melt down in the first fast-breeder reactor built at AEC's testing station at Arco, Idaho. Hilberry said the Arco plant "behaved beautifully for four solid years at steady power" but that certain instabilities were noted at low power. The melt down occurred as AEC scientists experimented in the fall of 1955 with alternate safety mechanisms.

Two different safety mechanisms were disconnected, he stated, with the intention of shutting the reactor down with a third, or by hand, if necessary. Through human error the reactor operator hit a wrong button and the test went beyond the point intended. The reactor core got too hot and the fuel elements melted.

A 6-point program for maintaining U. S. world leadership in atomic energy was outlined by Chairman Durham (Democrat, North Carolina) of the congressional Joint Atomic Energy Committee before a meeting of the National Industrial Conference Board on Atomic Energy in Industry. Durham stated that while he is an optimist on long-range prospects for atomic power, there is need for facing the "hard facts" of the current status of nuclear power development.

DURHAM suggested the following program: (1) authorize an additional plutonium producing reactor at Hanford, perhaps utilizing its waste heat for power; (2) authorize construction of a nuclear-propelled aircraft; (3) substantially increase AEC funds for reactor research and development; (4) inaugurate a speedier domestic reactor demonstration program which will ensure that we will have a variety of prototype power reactors by 1961-62; (5) establish a foreign power reactor program and, thereby, a foreign market for domestic equipment manufacturers; and (6) enact the indemnity legislation to cover liability for reactor accidents.

The list shows that Durham is disposed to seek a compromise somewhere between the AEC and its critics in Congress. Durham's agenda, in order of importance, included consideration of these items: (1) rapidly mounting costs of power reactor projects; (2) the fact that we are still in the development and not the commercial stage; (3) the need to maintain world atomic leadership in the face of friendly and other foreign competition; (4) the need for more risk taking, more private and government funds, and more trained technical and scientific personnel and less red tape. Equipment manufacturers, who usually operate on a fixed price contract, are having the most difficulty with rising costs.

The Shale Oil Experiments

THERE appears to be some sentiment in Congress for leasing to private industry the government's Rifle, Colorado, pilot plant for study of producing oil from shale deposits. Chairman Vinson's (Democrat, Georgia) Armed Services Committee opened hearings on what should be done with the installation. Interior's Bureau of Mines has conducted research at Rifle for ten years, at a cost of $23 million. The work was suspended last year for lack of appropriations. Vinson said the Rifle shale reserves are a "tremendous" asset which have a potential output of 22½ billion barrels of oil, if a way is developed to produce it commercially. He recommended that the Navy retain full control of the plant but lease it, under which a private contractor would conduct the research.

Telephone and Telegraph

FCC Work Load

THE Federal Communications Commission is up to its ears in work trying to keep pace with the increasing scope of the regulatory areas for which it is responsible. FCC Chairman McConnaughey outlined some of the commission's problems in a recent personal report to the House Interstate Commerce Committee.

In the common carrier field, McConnaughey reported that the nation's telephones now exceed 59 million and handle nearly 150,000 calls a minute. There are over 600 mobile radiotelephone systems in operation, the domestic telegraph system carries over 153 million messages a year, and the annual volume of the international cable and radio companies has increased to 550 million words.

"I wish I could effectively translate to you what the effect of this growth pattern is on the commission's work load," McConnaughey told the committee. "One example of the current problems in this field is a general investigation, now pending before the commission, of all interstate private line rates and services of the Bell system companies and Western Union. This investigation will include the so-called multiple channel rates and services offered by both companies, which is involved with the SAGE program of the Air Force."

The commission's safety and special radio services bureau, which handles those radio services that help protect life and property and contribute to industrial and business operations, has found that the uses to which radio can be put in these services seems almost endless. The demand, therefore, has been enormous. As of June 30, 1956, said McConnaughey, there were 338,886 stations authorized in these services having no less than 1,176,500 separate transmitters. More than 170,000 applications were received in these services in fiscal 1956, and the number is steadily increasing. Said McConnaughey:

> The fact is, that while radio has become an essential tool of industry, its use is now confined primarily to frequency bands allocated for this purpose ten years ago. In view of the tremendous expansion in industrial usage of radio, present allocations and rules may have to be revised drastically to obtain a more efficient use of available frequencies. In addition to reallocation among the services, one of the techniques which may prove useful in achieving these objectives is the split channel device of narrowing the band

of frequencies required for the operation of a particular type of station and thus making possible a greater total number of stations. Still another technique is the geographical sharing of frequencies between services with maximum needs in differing parts of the country.

In the broadcast field, McConnaughey said, there are now 3,005 AM stations and 529 FM stations on the air. Of 631 commercial TV stations now authorized, 472 stations are actually operating, with 382 in the VHF and 90 in the UHF portion of the TV spectrum. McConnaughey said the commission is making every effort to meet the problems that have arisen as a result of assigning UHF and VHF stations on an intermixed basis in the same areas. The FCC has initiated an immediate research and developmental program to determine the feasibility of a possible eventual shift of all TV to the UHF bands to make possible a substantially greater number of competitive services. At the same time, as an interim measure to improve existing competitive situations, the commission is acting on so-called deintermixture proposals to eliminate local VHF channels in UHF areas and to assign more VHF outlets to other localities. Recently, the commission took action in a number of deintermixture proceedings which, when and if completed, would result in making six specified areas UHF only and five areas VHF only and, in addition, will improve competition in three more communities.

Another major problem under consideration by the commission is subscription, under which programs would be transmitted by stations for reception in the home only by the payment of a fee. McConnaughey said there are substantial legal and policy questions with respect to these proposals which the commission has currently under active consideration.

The FCC is also looking into problems involving extension of television service to the more isolated communities of the country, McConnaughey told the committee. A number of unlicensed "booster" stations have been established in various areas and the legality of such operations is now before the courts for decision. Meanwhile, the commission has provided for the licensing of what are known as translator stations which the FCC believes can perform the function of the boosters, while avoiding the interference potentialities inherent in unlicensed and unregulated operations. There already have been over twenty of these translator stations authorized.

NTCA Meeting

The National Telephone Co-operative Association held its third annual meeting in Chicago last month. The meeting was held in conjunction with the 15th annual convention of the National Rural Electric Co-operative Association with which NTCA is affiliated.

NRECA's general manager, Clyde Ellis, sharply attacked the private telephone industry for alleged failure to serve rural areas. "We might as well be realistic," Ellis told the delegates. "Private telephone companies are never going to serve rural America. They are going to spite-line it and take the cream, as they have been doing since the rural telephone bill was passed. They are going to endeavor to kill all existing telephone co-ops and keep hundreds of others from being born. And they are doing a mighty effective job of it right now."

Ellis thinks established rural electric co-ops should help develop the spread of telephone co-operatives by sponsoring them

within their respective areas where there are enough unserved farmers and rural establishments to assure feasibility. He also urged telephone co-ops already in existence "to speak out against the treatment which the rural telephone program is getting from our federal government as well as from some of our state governments, and the telephone monopoly."

A major sore spot with telephone co-ops is the discrepancy in the number of commercial and co-operative borrowers from REA. Ellis charged that the rural co-operative telephone program is being "turned over to the very outfits which tried to kill it in the beginning and which are still trying to kill it." He pointed out that in 1956 there were 203 co-op borrowers and 306 commercial borrowers. In the same year, the increase in number of co-op borrowers was 7.4 per cent, while commercial borrowers increased 35.4 per cent.

Delegates to the NTCA meeting expressed gratitude to REA Administrator Hamil for a new REA policy with respect to equity requirements for REA loans to co-operatives.

Antisabotage Bill

SENATOR Bricker (Republican, Ohio) has introduced a bill which would provide penalties for malicious damage to certain private communications facilities. As explained by the Senator, the bill, S 1571, would make unlawful any willful or malicious act which injures or destroys any of the works, property, or material of any radio, telegraph, or telephone system leased, operated, or controlled by any common carrier, as defined in § 3(h) of the Communications Act of 1934.

The act already provides penalties for willful or malicious damage to any means of communication operated or controlled by the United States, but existing penalties do not extend to damage inflicted on communications systems leased by the government or those leased, operated, or controlled by federally regulated common carriers. Said Senator Bricker:

> Our commercial communications system is essential to the Strategic Air Command, the Ground Observer Corps, and, in general, to the effective functioning of our defense against enemy aircraft. It is entirely conceivable that any act of sabotage against any segment of our commercial communications system might gravely endanger the safety of the nation and might result in the loss of hundreds of thousands of lives. For that reason, I believe that state legislation relative to malicious damage to private communications facilities should be supplemented and reinforced by the additional power which would be given to the federal government by the bill I am introducing.

Although Senator Bricker did not so indicate, there was speculation that the recent telephone strike in Ohio may have sparked his decision to introduce this bill. It will be recalled that the Ohio strike was marked by considerable violence, as well as cable cuttings and other damage to the company's facilities. Bricker's bill would apparently apply to such activity under certain circumstances since its purpose is to protect the nation's communications facilities from any sort of willful injury or interruption, whether connected with a labor dispute or not. The bill has been referred to the Senate Interstate Commerce Committee.

Financial News and Comment

By OWEN ELY

Record Gain in Gas Reserves

THERE was a record annual increase in proved recoverable natural gas reserves in the United States in 1956, according to a recent announcement by the American Gas Association and the American Petroleum Institute. The gain was about 14 trillion cubic feet, raising total reserves to 238 trillion cubic feet. The 1955 gain approximated 12 trillion and the average in past decade has been about 8 trillion.

The annual increase is the result of four factors, as follows: extensions and revisions of previously estimated reserves —usually the largest amount; discoveries of new fields, and new pools in old fields; the net change in underground storage during the year—a very small item; and total gas produced during the year. The net amount after combining these four items, added to the previously estimated reserves, gives the new reserve figure. The table on page 540 gives these figures for the period 1945-56.

It will be noted from the table that discoveries of new fields and new pools have shown little progress in recent years, possibly due to fears of threatened regulation of independent producers. In 1953 this item reached a record amount of 7,081,-661 million cubic feet, but in the three later years has been less than 6 million. The sharp increase in extensions and revisions has, however, resulted in large net increases in total reserves in the past two years. Last year's net production consumed only 44 per cent of the amount added to reserves. Total reserves at the end of the year were adequate for nearly twenty-two years' production of gas at the 1956 rate, without additional discoveries, etc.

THE state of Texas accounts for nearly half the nation's production and reserves. Its 1956 production of 5.3 trillion cubic feet was 49 per cent of the U. S. total; and its reserves at the end of 1956 were 113 trillion cubic feet, more than 47 per cent of the total for the U. S. Thirty states are included in the report,

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but Texas and five other states—Louisiana, New Mexico, Kansas, Oklahoma, and California—represented about 93 per cent of total reserves and 91 per cent of 1956 production. Following Texas in reserves are, in trillions of cubic feet: Louisiana, 45; New Mexico, 24; Kansas, 18; Oklahoma, 14; and California, 9. Leading states after Texas in production last year were, in billions of cubic feet: Louisiana, 1,922; Oklahoma, 917; New Mexico, 642; Kansas, 578; and California, 488. Pennsylvania led all states in the amount of gas held in underground storage—326 billion cubic feet. Next came Ohio, 283 billion; Michigan, 234 billion; and West Virginia, 209 billion.

THE committee's report pointed out that it is frequently impossible to estimate the total reserves of a field in the year it is discovered. Satisfactory estimates can be made only after there has been sufficient drilling and, in some cases, adequate production history. For these reasons, the reserves listed as "discovered" during any given year must be considered only as the reserves indicated by the drilling in that year.

The reserves of all fields and pools are reviewed and revised upward or downward in each succeeding annual report to reflect additional information on preceding estimates, these changes being shown as "Extensions and Revisions." The committee stated:

> A proved reserve may be in either the drilled or undrilled portion of a given field. When the undrilled area is considered proved, it is so related to the developed acreage and the known field geology and structure that its productive ability is considered assured. Proved recoverable reserves of natural gas are those reserves estimated to be producible under present operating practices, with no consideration being given to their ultimate use. Since the estimates are made by pools, the recovery factors or abandonment pressures used in the calculations are governed by the operating conditions in each individual pool.

Heavy Utility Financing In First Quarter

TAKING advantage of improved conditions in the bond market, as well as a good demand for utility equities in their current vogue as "defense stocks," electric light and power companies have been doing a record amount of financing in the first quarter. Complete figures for the quarter are not yet at hand, but for the first two months the totals for electric and gas utilities compare as follows with last year, including new money issues only:

	1957	*1956*
Bonds	$507	$192
Preferred Stock	26	78
Common Stock	129	23
Total	$662	$293

A complete tabulation for all utilities would include the $250 million American Telephone and Telegraph debenture issue of March 26th and several issues by Bell subsidiaries aggregating over $100 million. The big telephone issue was sold to 133 underwriters at a 4.34 per cent rate, the highest encountered by the firm since 1930, although somewhat lower than expected previously.

According to the Irving Trust Company the electric utilities plan to do at least 50 per cent more financing this year than in 1956. Even at this early date, $750 million new financing by electric and gas utilities is scheduled for the second quarter, the bank reports.

Bonneville's Net Revenues Shrinking Rapidly

THE Columbia river power system consists of the Bonneville Power Administration (BPA) and various other hydro projects such as Grand Coulee, Hungry Horse, McNary, Chief Joseph, The Dalles, etc. The system is operated by BPA under the U. S. Department of Interior. During the year the Columbia river system added 562,000 kilowatts new generating capacity, including 280,000 at McNary, 256,000 at Chief Joseph, and 26,000 elsewhere.

The Columbia river system now represents an investment of $1.7 million, of which nearly three-quarters is allocated to power and over one-quarter to nonpower functions such as irrigation, flood control, navigation, etc. Since 1952 the increased investment allocated to power has increased 148 per cent while the nonpower component gained only 70 per cent. About 16 per cent of the government's investment had been repaid as of last June. While these repayments are said to be ahead of schedule, the estimates are "tentative pending the formalization of the cost allocations and repayment schedules."

With favorable hydro conditions, sales to customers of Bonneville totaled 26 billion kilowatt-hours in the fiscal year ended June 30, 1956, an increase of 19 per cent over the previous year. Water conditions were favorable during the year. Of the combined power revenues of $61 million for the Columbia river power system, the aluminum industry last year contributed 33 per cent, other industry 13 per cent, publicly owned utilities 32 per cent, privately owned utilities 20 per cent, and others 2 per cent.

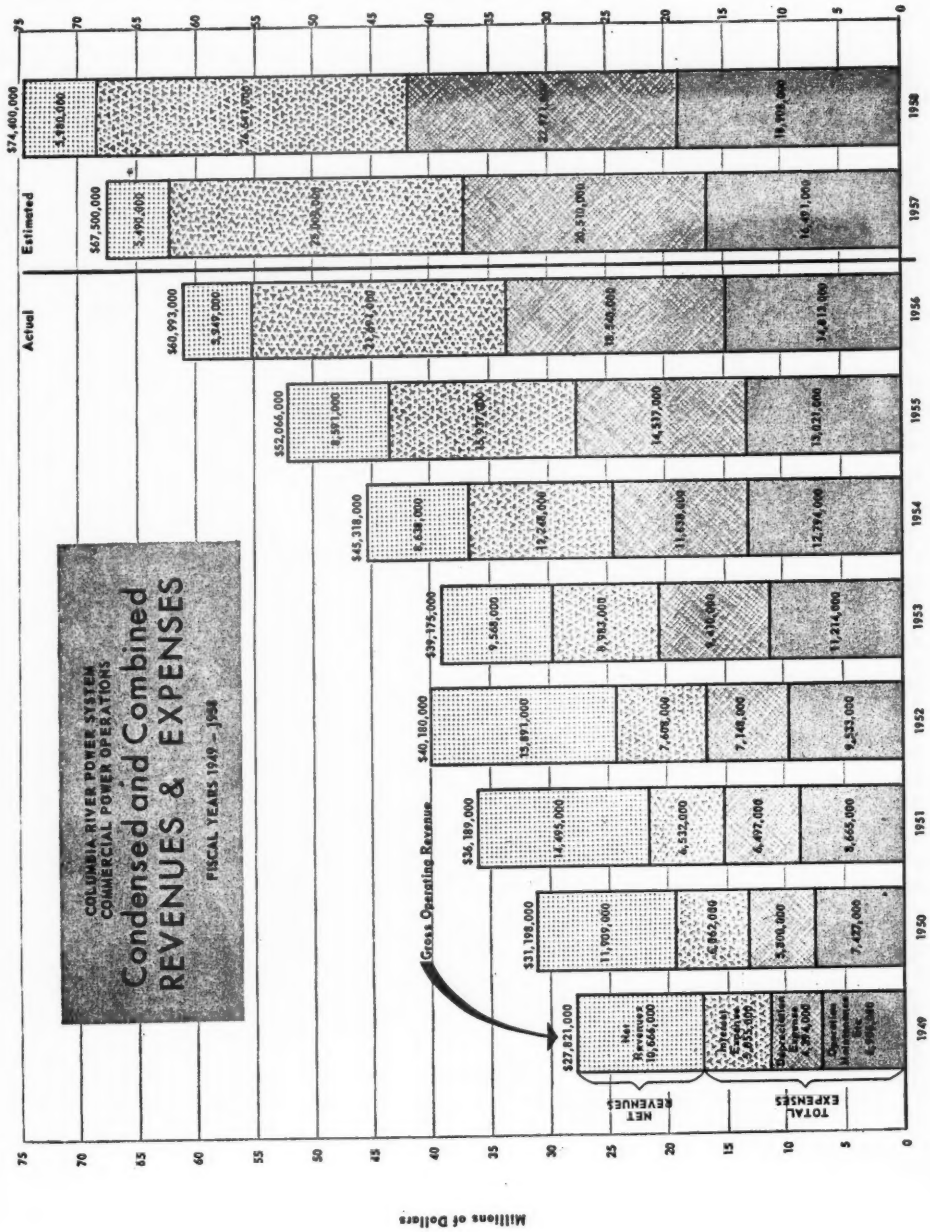
During its eighteen years of operation, the composite average kilowatt-hour rate charged by BPA has averaged 2.38 mills

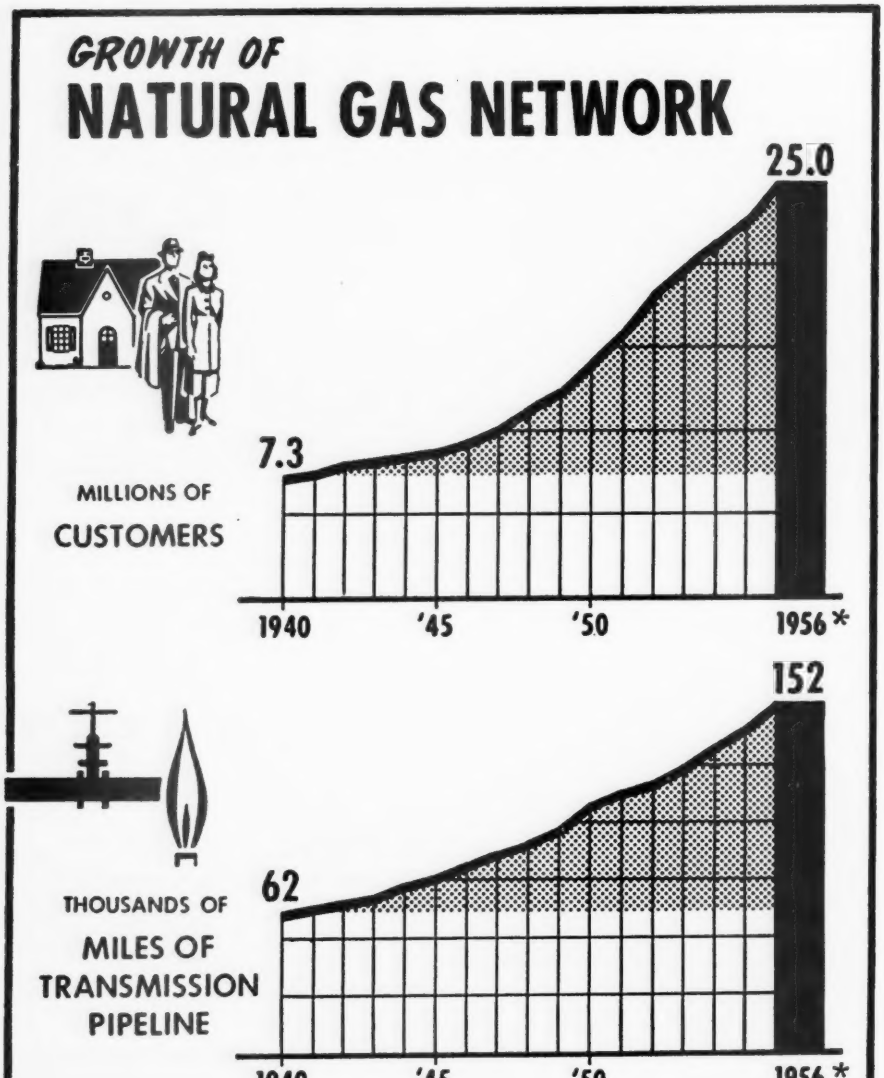
SUMMARY OF ANNUAL ESTIMATES OF NATURAL GAS RESERVES FOR PERIOD DECEMBER 31, 1945 TO DECEMBER 31, 1956

(Millions of Cubic Feet-14.65 psia, at 60 deg. F)

Year	Natural Gas Added During Year: Extensions and Revisions	Natural Gas Added During Year: Discoveries of New Fields and New Pools in Old Fields	Natural Gas Added During Year: Total of Discoveries, Revisions and Extensions	Net Change In Underground Storage	Net Production During Year	Estimated Proved Reserves As of End of Year	Increase Over Previous Year
1945						147,789,367	
1946	a	a	17,729,152	a	4,942,617	160,575,901	12,786,534
1947	7,570,654	3,410,170	10,980,824	a	5,629,811	165,926,914	5,351,013
1948	9,769,483	4,129,089	13,898,572	51,482	6,007,628	173,869,340	7,942,426
1949	8,061,429	4,612,870	12,674,299	82,746	6,245,041	180,381,344	6,512,004
1950	9,172,381	2,877,351	12,049,732	54,301	6,892,678	185,592,699	5,211,355
1951	13,013,606	3,039,385	16,052,991	132,751	7,966,941	193,811,500	8,218,801
1952	8,934,470	5,411,043	14,345,513	198,850	8,639,638	199,716,225	5,904,725
1953	13,371,355	7,081,661	20,453,016	516,431[b]	9,238,540	211,447,132	11,730,907
1954	4,632,309	4,966,894	9,599,203	90,906	9,426,509	211,710,732	263,600
1955	16,298,125	5,719,069	22,017,194	87,637	10,118,118	223,697,445	11,986,713
1956	19,214,604	5,636,476	24,851,080	133,970	10,907,926	237,774,569	14,077,124

a. Not estimated.
b. All native gas in storage reservoirs formerly classified as a natural gas reserve is included in this figure.


COLUMBIA RIVER POWER SYSTEM
COMMERCIAL POWER OPERATIONS
Condensed and Combined
REVENUES & EXPENSES
FISCAL YEARS 1949 – 1958
Actual
Estimated
Gross Operating Revenue
NET REVENUES
TOTAL EXPENSES
Millions of Dollars



The nation's expanding natural gas pipeline system added two million customers and 10,000 miles of transmission facilities in 1956. Customers have more than tripled since 1940 and service has been extended to 13 more states to bring the total to 46 states. Meanwhile, proved gas reserves reached an all-time high of 223.7 trillion cubic feet at the beginning of 1956.

per kilowatt-hour. Sales to publicly owned utilities averaged 2.81 mills, and to privately owned 2.30 mills. Industries paid 2.24 mills (aluminum slightly less), benefiting by very high load factors approaching 100 per cent.

BONNEVILLE and Grand Coulee are very low-cost power producers, primarily because they were constructed largely at prewar price levels. However, since 1952 the cost of the additional hydro projects has been much greater per kilowatt of capacity, which has resulted in a rapid rise in costs, particularly depreciation and interest. Since wholesale power rates have not been increased, net revenues have dropped sharply. Net revenues reached a maximum of $15.9 million in 1952, equal to nearly 40 per cent of operating revenues, but by last year had dropped to $5.9 million or less than 10 per cent of gross, and the ratio is expected to drop to 8 per cent in 1958. (See chart, page 541.)

The administration is hopeful of increasing net revenues by revising rates. Sales of nonfirm energy to the industries on an interruptible basis have been substantial in recent years, but have not been covered by formal contracts. BPA hopes to place sales of interruptible power on a firm contractual basis, with possible advantages to both itself and the customer.

While interruptible power is available for a fairly substantial percentage of the time, on the average, additional and substantial amounts are available for a much smaller part of the time, during the high runoff months of late spring and early summer and during other times when stream flow conditions are unusually favorable. If this low-availability energy can be offered for sale at sufficiently attractive rates, it may be possible to sell large quantities to replace steam generation, particularly for new steam plants, to supplement coastal hydro plants, or to industries that can adapt their operations to such power.

Ford, Bacon & Davis has prepared a report of the entire rate structure, which is being studied. Bonneville Power Administration's recommendations relative to the report will be submitted to the Secretary during the coming year.

British Estimate Atomic Power Cost at 7.7 Mills Per Kilowatt-hour

THE *Times* (London) of March 16th quoted Sir Christopher Hinton, managing director of the industrial group of the United Kingdom Atomic Energy Authority, as estimating the kilowatt-hour cost of producing electricity in atomic reactors as follows (we have translated costs in British pence into mills at the rate of $2.80 to the pound):

Depreciation (5 per cent interest and twenty years' life)	4.3	mills
Interest on fuel charge (5 per cent)	.7	"
Fuel replacement charge (uranium at $56,000 a metric ton)	2.8	"
Operating expenses	.7	"
Total	8.5	"
Credit for plutonium in irradiated fuel	.8	"
Net	7.7	"

The net cost of 7.7 mills is somewhat similar to the estimates of 7-9 mills in this country, though the methods of compiling the estimates may differ somewhat. (The British computation contains no estimate for taxes, for example.) Sir Christopher forecast that by 1970 the cost might well be reduced to 5.5 mills, and by 1980 to 4.4 mills. While progress in increasing the efficiency of coal-burning stations would continue, he thought this would be more than balanced by rising prices for coal.

THE major reduction in the cost of operating an atomic reactor is to be expected from the attainment of higher working temperatures and through the use of enriched fuels, he stated, but this requires the development of improved heat-resisting materials. At Calder Hall the highest temperature in the "cans" containing the fuel elements has now been raised to 842 degrees Fahrenheit and is expected to go somewhat higher. Beryllium would be the "obvious material" to adopt for canning, since its melting point is 2,372 degrees, but its use still presents problems and its adoption seems unlikely before 1963, at which time temperature would rise to 932 degrees and "the advantage will probably have passed by a small margin to the nuclear station." He forecasts temperatures of 1,112 by 1968.

TVA Revenue Bonds?

REPRESENTATIVE Robert E. Jones (Democrat, Alabama) has asked that the Tennessee Valley Authority be allowed to expand its power facilities "to keep up with the growing load of the area it serves."

Under a bill introduced in the House by Jones, TVA would issue revenue bonds to pay for the expansion of its power facilities rather than ask new funds from Congress. "Revenue bonds are proposed," Jones told a House Public Works subcommittee, "not to be guaranteed by the government, not to be tax-exempt, but bonds which will take their place in the money market backed by a record of good management which gives assurance of revenues as in the past."

RECENT FINANCIAL DATA ON GAS UTILITY STOCKS

Annual Rev. (Mill.)			*3/20/57 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1951-56*	*Price-Earns. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Pipelines									
$ 4	O	Ala.-Tenn. Nat. Gas	19	$1.20	6.3%	$1.45Se	13%	17	13.1	83%	37%
15	O	Commonwealth N. G. ...	31	1.60	5.2	2.72Se	7	X	11.4	59	37
16	O	E. Tenn. Nat. Gas	9	.60	6.7	.83De	30	X	10.8	72	19
48	S	Miss. River Fuel	35	1.60	4.6	2.17Se	16	6	16.1	74	52
80	S	Southern Nat. Gas	39	2.00	5.1	2.35De	D1	4	16.6	85	46
268	O	Tenn. Gas Trans.	32	1.40	4.4	1.93De	9	18	16.6	73	20
175	O	Texas East. Trans.	25	1.40	5.6	2.05De	2	3	12.2	68	24
71	O	Texas Gas Trans.	23	1.00	4.3	2.17De	25	4	10.6	46	27
88	O	Transcont. Gas P. L. ...	19	1.00	5.3	1.32De	15	19	14.4	76	19
		Averages			5.3%				13.5	71%	
		Integrated Companies									
158	S	American Nat. Gas	61	$2.60	4.3%	$4.34De	30%	13	14.1	60%	35%
50	A	Arkansas-Louis. Gas ...	22	1.20j	5.5	1.50Oc	NC	10	14.7	80	53
44	O	Colo. Interstate Gas	74	1.25	1.7	5.28Se	NC	45	14.0	24	35
343	S	Columbia Gas System ..	17	1.00	5.9	1.44De	33	7	11.8	70	43
8	O	Commonwealth Gas	7	.10	1.4	.26#	D51	D	—	38	72
12	A	Consol. Gas Util.	16	.90	5.6	1.39Ja	15	—	11.5	65	61
266	S	Consol. Nat. Gas	42	1.90	4.5	3.33De	16	4	12.6	57	67
178	S	El Paso Nat. Gas	32	1.30	4.1	2.12N	48	O	15.1	61	22
40	S	Equitable Gas	31	1.60	5.2	2.31De	14	4	13.4	69	32
17	O	Kansas-Nebr. Nat. Gas ..	36	1.65	4.6	2.44De	2	3	14.8	68	30
95	S	Lone Star Gas	34	1.80	5.3	2.19De	2	5	15.5	82	48
25	S	Montana-Dakota Util. ..	26	1.00	3.8	1.42De	D9	19	18.3	70	32
21	O	Mountain Fuel Supply ...	26	1.20	4.6	1.65Se	9	8	15.8	73	59
81	S	National Fuel Gas	20	1.10	5.5	1.64De	5	8	12.2	67	62
113	S	Northern Nat. Gas	55	2.60	4.7	3.60De	13	7	15.3	72	37
43	S	Oklahoma Nat. Gas	27	1.50	5.6	1.98Ja	D8	6	13.6	76	29

113	S	Panhandle E. P. L.	51	1.80	3.5	2.75De	10	16	18.5	65	35
11	O	Pennsylvania Gas	24	1.20	5.0	1.63#	D10	D	14.7	74	68
174	S	Peoples G. L. & Coke ..	185	8.00	4.3	12.27De	8	7	15.1	65	42
31	O	Southern Union Gas	26	1.12	4.3	1.69#	28	15	15.4	66	34
273	S	United Gas Corp.	34	1.50	4.4	2.28De	12	7	14.9	66	43
		Averages			4.5%				14.5	65%	
		Retail Distributors									
28	A	Alabama Gas	31	$1.60	5.2%	$2.36De	8%	31	13.1	68%	42%
44	O	Atlantic Gas Light	31	1.60	5.2	2.67De	32	11	11.6	60	36
5	O	Berkshire Gas	16	.90	5.6	1.34Au	111	46	11.9	67	37
4	O	Bridgeport Gas	28	1.60	5.7	2.57Se	22	48**	10.9	62	44
4	O	Brockton-Taunton Gas ..	17	.90	5.3	.85#	30	42	20.0	106	36
55	S	Brooklyn Union Gas	35	2.00	5.7	2.83De	5	5	12.4	71	47
1	O	Cascade Nat. Gas	10	—	—	Def.#	—	—	—	—	41
33	O	Central El. & Gas	16	.90	5.6	1.67Se	28	9	9.6	54	17
11	O	Central Indiana Gas	14	.80	5.7	1.08Se	13	D	13.0	74	64
5	O	Chattanooga Gas	5½	.30	5.5	.48N	40	14	11.5	63	45
64	O	Gas Service	25	1.36	5.4	1.92De	4	O	13.0	71	40
7	O	Hartford Gas	37	2.00	5.4	3.01De	39	5	12.3	66	48
2	O	Haverhill Gas	21	1.32	6.3	2.05F	37	2	10.2	64	58
31	O	Houston Nat. Gas	36	1.50	4.2	2.26Jy	24	6	15.9	66	22
17	O	Indiana G. & Water	20	1.00(k)	5.0	1.55De	10	9	12.9	65	45
45	S	Laclede Gas	15	.80	5.3	1.09De	4	7	13.8	73	35
4	O	Michigan Gas Utils.	21	1.05	5.0	1.31#	5	14	16.0	80	43
4	O	Midsouth Gas	13	.60	4.6	.72#	71	D	18.1	83	34
37	O	Minneapolis Gas	26	1.40	5.4	2.27Se	43	10	11.5	62	38
14	O	Miss. Valley Gas	19	1.12	5.9	1.92Se	14	—	9.9	58	28
5	O	Mobile Gas Service	22	1.00	4 5	1.23Se	D20	D	17.9	81	33
7	O	New Haven Gas	30	1.70	5.7	2.39#	7	17	12.6	71	63
12	O	New Jersey Nat. Gas ...	26	1.20(i)	4.6	2.23De	17	—	11.7	54	32
80	O	No. Illinois Gas	18	.88	4.9	1.39Ja	7	—	12.9	63	46
8	O	North Penn Gas	14	1.00	7.1	1.02De	23	7	13.7	98	56
6	O	North Shore Gas	14	.80	5.7	1.16De	23	6	12.1	69	54
183	S	Pacific Lighting	37	2.00	5.4	2.84De	5	33	13.0	70	44
19	O	Pioneer Nat. Gas	29	1.32	4.6	2.02De	15	17	14.4	65	39
13	O	Portland Gas & Coke ..	35	1.00	2.9	2.38De	6	8	14.7	42	36
2	O	Portland Gas Light	10	.75	7.5	1.22#	13	—	8.2	61	25
8	A	Providence Gas	9½	.56	5.9	.59#	16	16	16.1	95	64
3	A	Rio Grande Valley Gas ..	3	.15	5.0	.26Je	—	9	11.5	58	63
3	O	So. Atlantic Gas	13	.80	6.1	.89#	12	D	14.6	90	35
9	O	South Jersey Gas	26	1.40	5.4	2.12N	30	23	12.3	66	52
24	S	United Gas Impr.	36	2.00	5.6	2.41Se	16	D	14.9	83	64
48	S	Wash. Gas Light	38	2.06	5.3	3.04De	2	4	12.5	66	43
8	O	Wash. Nat. Gas	15	.10(1)	0.7	.34Se	D33	—	—	117	67
6	O	Western Ky. Gas	14	.60	4.3	1.24Ma	NC	29	11.3	48	35
		Averages			5.2%				13.1	71%	

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER STOCKS

Annual Rev. (Mill.)			*3/20/57 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1951-56*	*Price-Earns. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Communications Companies									
		Bell System									
$5,825	S	Amer. T. & T. (Cons.) ..	178	$9.00	5.1%	$13.10*De	—	2	13.6	69%	67%
245	A	Bell Tel. of Canada	47	2.00	4.3	2.43*#	—	3	19.3	82	63
43	O	Cin. & Sub. Bell Tel. ..	90	4.50	5.0	5.58De	2%	4	16.1	81	100
209	A	Mountain Sts. T. & T. ..	125	6.60	5.3	9.01De	16	13	13.9	73	68
308	A	New England T. & T. ...	135	8.00	5.9	9.01De	—	4	15.0	89	60
792	S	Pacific T. & T.	129	7.00	5.4	8.47De	D2	4	15.2	83	58
98	O	So. New Eng. Tel.	39	2.00	5.1	2.19De	13	3	17.8	91	59
		Averages			5.2%				15.8	81%	

		Independents									
5	O	Anglo-Canadian Tel. ...	35	$ .60	1.7%	$3.21De	20%	54	10.9	19%	44%
33	O	British Col. Tel.	43	2.00	4.7	3.32Se	6	22	13.0	60	28
2	O	Calif. Inter. Tel.	11½	.70	6.1	.80De	D20	—	14.4	88	30
13	O	Calif. Water & Tel.	20	1.20	6.0	1.46#	20	11	13.7	82	42
14	O	Central Telephone	20	1.00m	5.0	2.15Se	13	14	9.3	47	25
3	O	Commonwealth Tel.	14	.80	5.7	1.31#	27	26c	10.7	61	32
4	O	Florida Telephone	17	.90	5.3	.86De	D2	D	19.8	105	42
237	S	General Telephone	42	1.80	4.3	3.05De	17	32	13.8	59	37
15	O	Hawaiian Telephone	19	1.00	5.3	1.31F	D10	19	14.3	76	44
6	O	Inter-Mountain Tel.	14	.80	5.7	.80De	D16	2	17.5	100	62
22	S	Peninsular Tel.	43	1.80	4.2	2.15De	D10	2	20.0	84	46
21	O	Rochester Tel.	18	1.00	5.6	1.62De	6	6	11.1	62	39
3	O	Southeastern Tel.	16	.90	5.6	1.36Se	43	13	11.8	66	42
8	O	Southwestern St. Tel. ...	20	1.12	5.6	1.48Je	36	1	13.5	76	42
28	O	United Utilities	22	1.20	5.5	1.43Se	D13	8	15.4	84	31
12	O	West Coast Tel.	18	1.00	5.6	1.24Se	2	25	14.5	81	43
252	S	Western Union Tel.	19	1.00	5.3	2.21De	5	15	8.6	45	86
		Averages			5.1%				13.6	70%	
		Transit Companies									
22	O	Baltimore Transit	11	—	—	$ .18De	D86%	X	—	—	40%
13	O	Cincinnati Transit	4½	$ .30	6.7%	.48De	41	10	9.4	63%	46
9	O	Dallas Transit	5	.35	7.0	.57#	D48	D	8.8	61	51
31	S	Fifth Ave. Coach Lines	27	2.50	9.3	2.85#	D3	O	9.5	88	100
244	S	Greyhound Corp.	15	1.00	6.7	1.27De	8	—	11.8	79	52
21	O	Los Angeles Transit	17	1.40	8.2	.94#	D5	5	18.1	149	89
27	S	Nat. City Lines	22	2.00	9.1	2.74#	D1	11	8.0	73	93
13	O	Niagara Frontier Trans.	9	.60	6.7	1.47#	—	14	6.1	41	78
69	O	Phila. Transit	9	.60	6.7	1.67De	31	8	5.4	36	38
6	O	Rochester Transit	5	.40	8.0	.43#	D2	D	11.6	93	40
23	O	St. Louis P. S.	12	1.40	11.7	.68#	D15	28	17.6	206	91
15	S	Twin City R. T.	16	1.80	11.3	1.21De	1	D	—	—	48
22	O	United Transit	5	.60	12.0	1.03#	94	36	4.9	58	48
		Averages			8.6%				10.1	86%	
		Water Companies									
		Holding Companies									
34	S	American Water Works .	9½	$ .50	5.3%	$ .99De	1%	6	9.6	51%	16%
		Operating Companies									
4	O	Bridgeport Hydraulic ...	31	$1.60	5.2%	$2.04#	12%	4	15.7	78%	57%
13	O	Calif. Water Service	39	2.20	5.6	3.08De	14	3	12.7	71	32
3	O	Elizabethtown Water ...	36	1.60	4.4	3.01Ap	NC	36	12.0	53	56
9	S	Hackensack Water	41	2.00	4.9	3.60#	10	11	11.4	56	37
8	O	Indianapolis Water	18	1.00	5.6	1.42De	D12	17	12.7	70	34
5	O	Jamaica Water	34	2.00	5.9	2.91De	—	8	11.7	69	25
4	O	New Haven Water	57	3.00	5.3	3.32#	D3	4	17.2	90	63
2	O	Ohio Water Service	26	1.50	5.8	2.58De	14	7	10.1	58	36
8	O	Phila. & Sub. Water	29	.50(e)	1.7	2.74De	25	3	10.6	18	28
2	O	Plainfield Un. Water ...	66	3.00	4.5	5.47#	37	8	12.1	55	40
4	O	San Jose Water	44	2.80	6.4	3.59De	5	9	12.3	78	45
9	O	Scranton-Springbrook ...	17	.90	5.3	1.44Se	10	8	11.8	63	29
5	O	Southern Calif. Water ..	14	.80	5.7	1.15De	7	8	12.2	70	34
3	O	West Va. Water Service	21	1.40	6.7	1.85Se	41	1	11.4	76	17
		Averages			4.9%				12.4	61%	

A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. #—Year ended December, 1955. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Ju—July; Au—August; Se—September; Oc—October; N—November; De—December. (e)—Also paid 5 per cent stock dividend December 1, 1956. (i)—Paid 2 per cent stock dividend December 10, 1956. (j)—Paid 10 per cent stock dividend November 21, 1956. (k)—Paid 3 per cent stock dividend December 19, 1956. (l)—One share of Pacific Northwest Pipeline for 70 shares held. (m)—Paid 10 per cent stock dividend January 2, 1957. NC—Not comparable. NA—Not available. X—Deficit in 1951. *On average shares. **1951 was an abnormally bad year.

What Others Think

Field Organization of Electric Utility Companies

BASED upon an examination of recent organization charts of 86 of the leading electric utility companies, it has been possible to determine, to the extent revealed by the charts, the various patterns of field organization in effect. The findings are reported in this review.

The term "field organization" is used in the sense that excludes generating stations and system operation organizations.

In the cases of 19 of the 86 companies, however, the plans of field organization could not be determined. In some of these cases, the companies have no field organizations; in other cases, the charts are simply not complete enough to show the field organization patterns that are in existence.

The findings concerning the remaining 67 companies relate to the number of main field organization units, their names, the titles of their heads, the places they occupy in their company organization structures, and the plans in effect, for the supervision of their managements.

Number of Field Organization Units

ALTHOUGH *some* information about the field organizations could be gleaned from the charts of 67 companies, data as to the *number* of field organizations could be obtained in the cases of only 53 of these companies. In these 53 companies, the main field organizations are distributed in number as follows:

Number of Main Field Organizations	*Number of Companies*
14	1
13	1
12	2
10	2
9	1
8	3
7	6
6	7
5	10
4	8
3	6
2	4
1	2
All numbers	53

On the average, these companies have from five to six main field organization units.

Information is not available in most cases from the charts to show the way in which these main field organizations are (or are not) subdivided into smaller units. In a number of cases, however, it is evident that the companies having large numbers of main field organization units are not required to subdivide them into smaller units.

There seems to be no significant correlation between size of company territory and number of main field organization units. There is some evidence, however,

that companies with service areas concentrated principally in large cities influence the average figure, above cited, in the direction of the smaller numbers.

Names of Main Field Organization Units

IN the cases of all of the 67 companies relative to which some information as to field organizations could be obtained, it was possible to determine the names given to their main field units. The findings in this instance may be summarized as follows:

Name of Main Field Organization Units	*Number of Companies*
Division	50
Extension Division	1
District	12
Service Area	1
Area	1
Subsidiary Company	2
All cases	67

The term "division" is by far the most prevalent of the six terms that are applied as names of the main field organizations.

Titles of Heads of Main Field Organization Units

IN the cases of those companies in which the titles and numbers of main field organization unit heads can be identified from the information at hand, the title of division manager is the one most frequently used. In a number of cases, however, the heads of the main field units are vice presidents; and in a few companies other miscellaneous titles are in evidence. Where the main field units are called districts, of course, the field unit heads are in most cases known as district managers.

A frequency distribution of the various titles that are used is shown as follows:

Title of Heads Of Main Field Organization Units	*Number of Positions To Which Title Is Applicable*
Vice President	15
V. P. and Division Manager	8
Administrative V. P.	3
Division Vice President	4
Division Manager[a]	197
Division Commercial Manager	1
Commercial Division Manager	6
District Manager	47
Service Area Manager	[b]
Area Manager	[b]
Superintendent	1
Subsidiary Company President	2

[a] Same title used in five other companies, but number of main field units not shown.

[b] Title used in one company, but number of main field units not shown.

Place of Field Organization Units in Company Organization Structure

EXAMINATION of the plans by which the main field organization units are fitted into the general company organization reveals the existence of four different broad patterns. These may be described in summary language as follows:

Pattern	*Description*
1.	Direct supervision of main field executives by the chief executive
2.	Supervision of main field executives by an immediate subordinate of the chief executive
3.	Supervision of main field executives by some other general office executive
4.	Split supervision of field executives

In the cases of the last three patterns, each may be subdivided into several subsidiary kinds of supervisory arrangements, as is explained later.

Plan for Supervision of Main Field Executives by Chief Executive

IN as many as nine different cases, the plan of fitting the field organizations into the general company organization structure follows Pattern No. 1.

All of these companies except one are medium in size as measured by annual revenues. The exception is a company of larger than medium size. All of these companies, except one of those with medium annual revenue totals, have large service areas.

Plans for Supervision of Main Field Executives by an Immediate Subordinate of the Chief Executive

THE arrangements that have been classified under Pattern No. 2 may be further subdivided into three different kinds of supervisory plans, as follows:

Pattern	*Plan Entailing Supervision of Main Field Executives by One of the Chief Executive's Immediate Subordinates with Other Responsibilities as Indicated*
2a	No other supervisory responsibilities.
2b	A few other supervisory responsibilities.
2c	Multiple supervisory responsibilities.

Information as to the extent of utilization of each of these plans by various companies is presented in the ensuing paragraphs.

Plan for Supervision by Chief Executive Subordinate with No Other Supervisory Responsibilities

In 13 different companies, although the chief executive does not himself give direct supervision to the main field executives, responsibility for such supervision is kept exceedingly close to the chief executive through the device of establishing a position immediately subordinate to him with no other responsibility than that of supervising the main field executives. The titles of the chief executives' immediate subordinates with such supervisory responsibilities in the 13 companies are identified as follows:

Title of Position In Supervision Over Main Field Executives	*No. of Companies*
Executive Vice President	2
Vice President	2
Assistant to the President	1
Vice President, Division Operations	3
Vice President in Charge of Extension System	1
Vice President (Operations)	1
Vice President (Administration)	1
Vice President and Asst. General Manager	1
Assistant General Manager	1
Total	13

Thus, of the 67 companies on which field organization information is available, as many as 22 (or about one-third) of them provide for top-level supervision of the main field executives by the chief executive in each case or by one of his immediate subordinates whose sole responsibility it is to provide such supervision.

Plan for Supervision by Chief Executive Subordinate with a Few Other Supervisory Responsibilities

ONE step removed from the plan just previously outlined is the plan whereunder supervision of the main field executives is made the responsibility of a chief executive's immediate subordinate who has a few other, but not broad and general, supervisory responsibilities. This plan (designated as Pattern 2b hereinabove) is followed in 11 different companies.

The titles of the immediate subordinates involved are given as follows:

Title of Position In Supervision Over Main Field Executives	*No. of Companies*
Executive Vice President	1
Vice President	3
Vice President and Manager, Division Operations	1
Vice President, District Operation and Sales	1
Vice President—Commercial	2
Vice President (Distribution Group)	1
General Operating Superintendent	1
Director of Operations and Construction	1
Total	11

Plan for Supervision by Chief Executive Subordinate with Multiple Supervisory Responsibilities

Eight other companies are organized in accordance with Pattern 2c, whereunder the main field executives are under the supervision of one of the chief executive's immediate subordinates who has multiple (broad and general) responsibilities. In

one case, the immediate subordinate is an executive vice president, and in the other seven cases vice presidents, most of them with combination titles of one kind or another, are involved.

Plans for Supervision of Main Field Executives by Some Other General Office Executive

Subclassification According to Extent Of the General Office Executive's Responsibilities

THE arrangements that have been classified under Pattern No. 3, according to which the main field executives are under the supervision of a general office executive who is not an immediate subordinate of the chief executive, may also be further subdivided into three different kinds of supervisory plans, as follows:

Pattern	*Plan Entailing Supervision of Main Field Executives by a General Office Executive (Not an Immediate Subordinate Of the Chief Executive) with Other Responsibilities as Indicated*
3a	No other supervisory responsibilities.
3b	A few other supervisory responsibilities.
3c	Multiple supervisory responsibilities.

Information as to the number of companies in which each of these plans is followed is presented in the next paragraphs.

Plan for Supervision by General Office Subordinate with No Other Supervisory Responsibilities

In each of seven companies, the field executives are under the supervision of a general office executive with no other supervisory responsibilities who is not an immediate subordinate of the chief executive. Thus, the responsibility for supervision of field executives is channeled into one spot, but the person occupying that spot is separated from the top executive by one or more levels of intermediate supervision. The titles involved are:

Vice President—Division Operations (2)
Vice President, Geographic Divisions
Vice President
District Operations Department Head
Supervisor of District Offices
Manager, Commercial Divisions

Plan for Supervision by General Office Subordinate with a Few Other Supervisory Responsibilities

There is only one company among the group of 67 following a plan (termed Pattern No. 3b herein) whereunder the main field executives are under the supervision of a general office executive, not an immediate subordinate of the chief executive, with a few other supervisory responsibilities. In this case, a commercial vice president is involved.

Plan for Supervision by General Office Subordinate with Multiple Supervisory Responsibilities

Only one company of the 67 follows a plan (termed Pattern No. 3c herein) providing for supervision of the main field executives by a general office executive, not an immediate subordinate of the chief executive, who has multiple supervisory responsibilities. In this case, the subordinate general office executive is known as the manager of system operations.

Plans for Split Supervision of Field Executives

Identification of the Different Plans For Split Supervision

THE various plans for split supervision of the field executives may be grouped into three categories:

Pattern	*Description*
4a	Some main field executives responsible to one general office executive, and other main field executives responsible to another general office executive.
4b	Each main field executive responsible to more than one general office executive.
4c	More than one main field executive at each location, responsible through separate channels to different general office executives.

"OK, EVERYBODY—INHALE!"

Geographical Basis for Split Supervision

The arrangement herein termed Pattern No. 4a provides for split supervision at the general office of the main field executives on some geographical basis. One general office executive will supervise the field executive at one location (or the field executives in one general territory), while another general office executive will supervise the field executives located elsewhere. This plan is followed by five companies.

Functional Basis for Split Supervision At General Office Level

In four companies, the main field executives (under Pattern 4b) are each responsible to more than one general office executive, depending upon the functional matter involved. For example, there are as many as five separate channels of supervision for the general office of one company to each of its division managers, with no one general office executive having general authority outside his functional area over the division managers.

Functional Split of Field Executive Responsibility

In each of eight companies, there is more than one main field executive at each location, and each such field executive is responsible to a functional counterpart in the general office. Thus, the functional split for supervisory purposes is present not only at the general office level but also at the main field executive level, there being no *single* top field executive.

Summary and Conclusions

THIS review is based upon an examination of the plans of field organization

in 67 different electric utility companies, as shown by the organization charts for such companies.

There are from five to six main field organizations in the average company. Most of these companies call their main field units "divisions"; and in most companies the heads of the main field organizations are known as "division managers."

Four different principal patterns (three of them further subdivided, each into three subpatterns) of fitting the main field units into the company general organization structure can be recognized in studying the various organization charts. These patterns (and subpatterns), together with the number of companies adhering to each, are shown in the following tabulation:

Pattern	*Brief Description*	*Number of Companies*
1	Direct supervision of main field executives by the chief executive	9
2	Supervision of main field executives by one of the chief executive's immediate subordinates who has:	
2a	No other supervisory responsibilities	13
2b	A few other supervisory responsibilities	11
2c	Multiple supervisory responsibilities	8
3	Supervision of main field executives by a general office executive (not an immediate subordinate of the chief executive) who has:	
3a	No other supervisory responsibilities	7
3b	A few other supervisory responsibilities	1
3c	Multiple supervisory responsibilities	1
4	Split supervision of field executives:	
4a	Geographical basis	5
4b	Functional basis	4
4c	Field-functional split	8
	Total	67

If there is any "weight of evidence" in these data, it is discernible in relation to two factors. These factors are (a) the very high level of much of the supervision over main field executives and (b) the undivided attention given to much of the general office supervision over field management.

With respect to this first factor, it is to be noted that in 41 of the companies (over 60 per cent of them) the responsibility for general office supervision of main field executives is held by the chief executive himself or is given to one of his immediate subordinates. This fact indicates strong support for the thought that field activities are important enough to receive the supervisory attention of a top-level executive of the company.

But if there are good arguments for the delegation of this supervisory authority to a lower general office level, as there very well may be in a given company, there is at the same time strong support in the patterns that are followed for the idea of putting this authority in the hands of someone with nothing or little to distract his attention. In 32 of the 67 companies, the general office responsibility for supervision over the main field executives is vested in a position carrying with it no other responsibilities, or only a few other responsibilities.

If there is a guiding principle to be drawn from the examination of field organization patterns that has been made, in the author's opinion it is this: Place the responsibility for supervision of main field executives in a general office executive, give him little or nothing else to do, and fit his position in the company organization structure not lower than the second echelon below the chief executive.

—George W. Peak

Atomic Energy and the Holding Company Act

In the understandable enthusiasm over prospects for the peaceful adaptation of atomic power, the legal problems that will be encountered as development progresses have perhaps not received the attention they deserve. Writing in the January issue of the District of Columbia Bar Association *Journal,* Robert T. Murphy, a member of the D. C. bar, points out that lawyers must show the way "for those industrial pioneers and other members of the laity who otherwise may become enmeshed in a maze of legal concepts which have been developed to fit the conventional needs of our nonatomic world."

Traditional concepts in areas governing workmen's compensation, tort liability, insurance, state and federal relationship, taxation, patents, and international relations are but some of the fields in which the impact of the development of atomic power raises a host of problems. In his article, Murphy addresses himself to one area in which atomic energy has introduced a need for reappraisal of present-day legal concepts; namely, regulation under the Public Utility Holding Company Act of corporations formed by many corporate partners for the purpose of developing production of electric energy from special nuclear material.

Noting that few private utility companies are financially capable of assuming the entire expense and economic risk involved in such a pioneering undertaking, Murphy sees development of the atomic energy industry by means of group undertakings whereby the cost would be spread among many partners, each of whom would provide some of the capital and assume a fair share of the risk, not only for construction, operation, and maintenance expense, but also liability for possible extensive injuries caused by atomic accidents. The logical management method would seem to be the formation of a separate corporation especially formed for the purpose. Although some observers believe that such a corporation need last only through the research and development stage, after which it would be converted to a standard operating company, Murphy thinks that this view, while logical, is based on pure speculation.

"Since the Public Utility Holding Company Act is designed to apply to any company which controls a public utility company," says Murphy, "the subordinate company owning and operating the reactor facility as well as the group of its corporate owners might well be confronted with the application of the manifold regulatory provisions of the act which is administered by the Securities and Exchange Commission. For the operation of any facility for the production of electric energy clearly brings a company within the definition of an 'electric utility company' as defined in the act. The production of only heat from atomic sources, which is conveyed to a separately owned generating plant, may or may not constitute such a producer as 'an electric utility.' However, the operation of both heat-producing and generating facilities by a single corporation would manifestly bring such company within the statutory definition of 'electric utility company.' In any event, it is generally assumed that the operation of an atomic reactor facility which would play any part in the eventual production of electric energy does invite the attention of the Securities and Exchange Commission under the Holding Company Act if several corporate partners, owning a substantial interest therein, are involved."

Many industrial corporations, Murphy explained, such as electrical equipment manufacturers, automobile companies, en-

gine and motor production companies, and chemical firms have expressed a desire to participate in the research phase of atomic electric development in co-operation with utility companies. "For them," he states, "the Holding Company Act would introduce a strange and repressive mode of regulation, completely foreign to their normal business activities. The utility companies, naturally, have had a direct relationship with the act for the past twenty years and are familiar with its terms and the character of its regulations. During this period of time most of them have so arranged their affairs as to earn an exemptive status from the sweeping regulations evolving from the act. There is little desire on their part to once more come within the coverage of the statute and, in some cases, the application of its provisions would result in the need for complete corporate reorganization. The Holding Company Act, therefore, presents a problem to the task which private industry has assumed in moving along the road toward eventual generation of competitive electric power from the new source afforded by special nuclear material."

SPECIFICALLY, Murphy explains, the Holding Company Act was primarily directed to the dissolution of corporate combines which had been found to create serious regulatory problems for local rate-making agencies and whose complicated, confusing, and uneconomical capital structures were resulting in speculative classes of securities which were a threat to both consumers and investors and highly detrimental to the public interest.

"The act is designed to apply to any company which *controls* a public utility company. A public utility company may be either an electric utility company . . . or a gas utility company. . . . In determining what constitutes a 'holding company,' actual control is the ultimate test, but in arriving at that determination there are two methods: (1) A *prima facie* or presumptive test, which applies automatically without act by the commission, and (2) a *de facto* test, which applies only on appropriate ruling of the commission after a hearing with right of appeal. Thus, § 2-a-7(A) of the act defines a holding company as one which directly or indirectly owns, controls, or holds with power to vote 10 per cent or more of the outstanding voting securities of a public utility company. This is the *prima facie* or presumptive test. Section 2-a-7(B) defines a holding company as one which directly or indirectly exercises (either alone or pursuant to an arrangement or understanding with one or more other persons) a controlling influence over the management or policies of a public utility company. This finding of controlling influence must be made by the commission after hearing. This is the *de facto* test.

"Even after a determination that a company is a holding company, the act provides for various exemptive possibilities by commission order.

"BROADLY speaking, the act incorporates a complete system of control and regulation of parent companies and subordinate utility companies. There are six groups of regulatory provisions in the act relating to the following topics:

1. Registration (publicity) §§ 4 and 5.
2. Issuance of securities (equity cushioning) §§ 6 and 7.
3. Acquisition of securities and utility assets (inside profits, overcapitalization, etc.) §§ 8, 9, and 10.
4. Corporate reorganization and simplification (break up of units which cannot justify economic existence) § 11.

5. Service contracts and other intercompany transactions (interlocking directorates, draining of profits, etc.).

6. Reports and accounts (uniformity in method of accounting) §§ 14 and 15.

"Other sections of the act deal with administration and enforcement of these six groups of regulatory provisions and with definitions (§ 2), exemptions (§ 3), and administrative procedure and penalties."

According to the tenth annual report of the Securities and Exchange Commission "the key provisions of the act, however, are contained in § 11, which requires the limitation of holding company systems to an integrated system or systems and related other businesses and the corporate simplification and equitable distribution of voting power in holding company systems." In implementing the act, the Securities and Exchange Commission has imposed standards which require:

1. Sufficient common stock capital and surplus to protect the debt securities so as to reduce the danger of default and loss to holders of utility bonds and to promote stability of equity securities by eliminating undue leverage.

2. Prevention of interlocking relationships among companies and company managements which create conflicts of interest and concentration of control to a harmful degree.

3. Physical integration so that existing holding company systems rest upon a sound functional and geographic basis.

4. The avoidance of participation by utilities in other industrial activities or vice versa to a degree which causes divided interest of management and volatile market performance by the company's securities.

5. The simplification of capital structures.

6. The adequacy of protective provisions with regard to bonds and preferred stocks—securities which are senior as to claim on the company's earnings and assets but junior as to control.

THE obligations imposed upon holding companies and subsidiaries ranging from necessity for registration with and submission to the jurisdiction of the commission, security issuance and acquisition approval, prevention of intercompany transactions and interlocking directorates, regulation of intercompany loans, as well as specialized accounts, records, and reports . . . "cast a discouraging burden upon those companies, including many nonutilities, who may desire to join together in order to accomplish needed research and development in the field of atomic electric power." The SEC, however, has already adapted one administrative exemptive possibility to permit a group undertaking in this field in the case of Yankee Atomic Electric Company, Murphy pointed out. Additionally, the commission has recently amended its rules to clarify an exemption for nonprofit corporations while engaged in research and development of the industrial use of atomic materials as a means of providing heat for the generation of electric energy.

"Nevertheless," he states, "the statutory limitations affecting the commission's rule-making power as well as possible innovations and improvements in reactor facilities raise more than a lingering doubt as to the feasibility of continued administrative exemptions serving the purpose of encouraging industrial participation on a wide scale in the needed development of atomic electric power."

Murphy outlines the arguments setting

forth disadvantages as well as advantages to the public interest which must be carefully assessed before any special consideration to atomic electric power combines becomes a matter of agreed national policy.

"It is true," he notes, "that the production of atomic power will require large investments of capital for many years to come without any sound hope for profitable return on such investment. In certain cases this may require a combination of companies. But it is contended that we should not abandon one of the few safeguards we have against corporation combines by removing them from the scrutiny of the Securities and Exchange Commission, acting under the Public Utility Holding Company Act. As matters now stand, a few large corporations have the bulk of the technological know-how gained under government contracts over all potential competitors in the field of atomic energy research. That alone raises a threat to the interests of the public because of its monopolistic character.

"In the creation of a separate corporation theoretically owning the plant facilities of the atomic electric power project, but actually dominated and controlled by a combination of large corporate owners, wholly exempt from the regulations of the Holding Company Act, many observers fear a return to practices which gave rise to the enactment of the regulatory statute itself. Intercompany transactions, they feel, would be inevitable, leading to practices which could be rooted out only by a return to open competition. The individual interests of the owning companies would tend to override the single interest of the subordinate company. Write-ups might follow, thereby denying to consumers the eventual cost saving which special nuclear material offers as against the use of conventional fuels such as coal, oil, or gas. Critics still recalled the old abuse of capitalizing water rights as merely one of the dangers which are nonregulated and which the corporation might pose to the public interest. Rates, it is true, would be regulated by either state or federal power commissions, but none of them would have the tools which are now available to the Securities and Exchange Commission under the Holding Company Act to prevent a revival of financial abuses in the electric utility field which plagued consumers and investors alike during the free-booting days prior to 1935. Consequently, in any form and on any basis, there are many who believe that the Securities and Exchange Commission backed up by the Holding Company Act, should remain on the job as the public's policeman—a policeman who should be tolerant during the infant days of the development of the new art but tough and stern whenever needed.

"Additionally, there is a decided opinion among many interested observers that there is no demonstrated need for a statutory exemption from the provisions of the Holding Company Act in the light of the flexibility permitted the commission, within its framework, to meet and appropriately deal with any type of problem which might arise in the near future. This view is seemingly reinforced by the fact that the only atomic power project as submitted to the commission for acceptance has been granted desired approval and exemption by enlightened application of the present statute and the established standards and policies thereunder."

On the other side of the question, Murphy points out that "there is a large body of opinion to the effect that the act serves as a serious discouragement of

undertakings in this field which might otherwise be feasible — undertakings which are needed to keep our country in the forefront of development of peaceful atomic energy. It is important that every mode of encouragement and stimulation be given to every segment of industry, consistent with the public interest, to carry on these needed projects.

"Companies, not otherwise holding companies, ought not to become subject to the jurisdiction of the Securities and Exchange Commission and the manifold regulations of the act simply because of their participation on research and development projects for the nuclear generation of electric power. Accordingly, to this school of thought, the potential benefits to be gained by removing this legal retard far outweighs any advantage to be gained by stubborn insistence upon applying it to such projects in the same manner as conventional power undertakings."

FACTORS which lend great validity to this point of view, says Murphy, are:

1. Conventional financing and laws relating to normal utility enterprises where cost factors are known are not necessarily adaptable to the construction and operation of atomic reactor generating facilities.

2. Joint efforts among scattered individual operating utility companies— and, in some cases, partnerships with wholly industrial companies — are needed because of the magnitude of the funds required to develop such projects. These joint undertakings are desirable, not only to get the program off the ground, but also to spread the industrial know-how in as wide an orbit as possible.

3. Atomic electric undertakings must remain on the plateau of research and development for many years to come, since commercial production of electric power from atomic sources at costs competitive with conventional sources of power is many years removed.

4. There are no dollar profits to be realized in the atomic research and development program so that ordinary motives of financial gain which usually constitute the root of economic and social abuses are absent.

5. Since ownership of special nuclear material is retained by the U. S. government, under the provisions of the Atomic Energy Act of 1954, no single company or group of companies owning atomic reactor facilities can become a law unto itself. An effective control can be exercised at all times by the government through such ownership device.

"Additionally," he continues, "this body of opinion points to the irrefutable fact that essential government regulations will be present at all times even though the Holding Company Act might be removed from the field. For example, any atomic electric power undertaking would still be subject to monopoly control under our antitrust statutes, its rates and charges subject to either or both state and federal regulation, its securities operations subject to scrutiny under the Securities Act or Trust Indenture Act. Consequently, there would be no absence of monitors at present and at all future stages of atomic electric development which could act swiftly and severely should any abuses threaten the public interest."

As Murphy sees it, there is a need for lawyers as a profession to devote their skill and talent to aid and assist in the advance of the peaceful use of this new source of power.

The March of Events

FPC Examiner Denies Natural Gas Rate Boost

A FEDERAL POWER COMMISSION examiner recently ruled that a $1,526,200 annual wholesale natural gas rate increase which Michigan Wisconsin Pipe Line Company of Detroit has in effect should be disallowed. Michigan Wisconsin serves many Wisconsin utilities, including the Madison Gas & Electric Company.

The decision by Examiner William J. Costello would require refund of excess amounts collected from 16 wholesale customers in Wisconsin and Michigan between April 1, 1955, and November 15, 1956.

His ruling would become a commission order unless a review is begun within thirty days.

In his ruling on the earlier increase, Costello held that the company "has not established the justness and reasonableness" of the rates it put into effect April 1, 1955, subject to refund. He said the increase was intended "only to reflect" increased cost of gas purchased by Michigan Wisconsin from Phillips Petroleum Company, Bartlesville, Oklahoma.

However, he continued, a thorough cost-of-service study by the commission's staff led him to conclude that increased sales during the period at issue enabled Michigan Wisconsin to absorb the additional $1,522,721 annual increase in cost of gas purchased.

Michigan Wisconsin put into effect November, 1956, another temporary increase of $4,074,531 a year on which the commission proceedings are pending.

Arkansas

Industrial Gas Rate Study Announced

CHAIRMAN Lewis M. Robinson of the state public service commission announced last month the retention of the firm of Arthur Andersen & Co. to make a study of how much it costs Arkansas Louisiana Gas Company to serve its small industrial customers.

Such customers now are being served under a 3A rate schedule which is 29 cents a thousand cubic feet, with the provision that their service can be interrupted. Ark La last year started offering these customers a new contract for a 3X rate which would be 34 cents for three years, plus a guaranty that their service would not be the first to be interrupted.

When Ark La curtailed service to some of these users in November because of cold weather, some of them protested that the

interruption was a means of forcing them to sign the contracts. Ark La said it was caused by heavy domestic use of gas.

The commission conducted a hearing on the proposed contracts in December and suspended the contracts which would have taken effect on January 1st. The commission recessed the hearings until April 8th to give it time to make a cost-of-service study.

Colorado

Utility Bills in State Legislature

A BILL to require public utilities to pay the full cost of their regulation by the state public utilities commission was given final passage by the state legislature last month and sent to the governor for signature. Governor McNichols had recommended passage of the measure. Colorado utilities have been paying 75 per cent of the commission's cost of regulating them, with the other 25 per cent coming from the state general fund.

The state senate recently refused to give the state commission power to regulate the direct sale of natural gas by interstate pipelines. Senator Donnelly (Democrat, Trinidad) said the interests of "hundreds of thousands of electricity consumers" in Denver, Pueblo, Colorado Springs, Trinidad, and other cities were indirectly involved. He said the electricity they purchase is manufactured by gas plants served directly by distributors. Donnelly's bill was defeated, 15 to 12.

District sales—principally by the Colorado Interstate Gas Company of Colorado Springs—are not subject to state or federal regulation. Other sales are.

Maine

Power Rate Hike Denied

AN average rate increase of 5.3 per cent proposed by the Central Maine Power Company was denied last month by the state public utilities commission.

On the basis of information developed during eight months of public hearings between July and December, the commission held that the company's net operating income of $10,064,000 a year is "more than fair and reasonable on the basis of the evidence before us."

The commission said this yields a return of 5.61 per cent of a rate base of $179,250,000, or 6 per cent of average net plant investment of the company's operating property in service.

The commission disallowed the company's proposal to use one method of computing depreciation of new operating property for actual income taxes and another method, resulting in a higher theoretical tax, for rate-making purposes. This involves the relatively new 1954 federal law permitting accelerated depreciation for tax purposes.

Massachusetts

Power Authority Bill Rejected

A BILL proposing the establishment of a state power authority was rejected last month by the state senate.

The measure had been filed for the Municipal Electric Association of Massachusetts.

It had been strongly opposed by the Massachusetts Electric and Gas Association.

Nebraska

Legislature Turns Down Bill

THE state legislature went on record recently against an oil and natural gas conservation commission as proposed in a bill previously killed in committee. The senators turned down a motion by Senator Bixler of Harrison to revive a bill calling for regulation of oil and natural gas wells. The judiciary committee had killed the proposal by a 4-to-3 margin.

Bixler said a commission is needed to prevent waste in the oil and natural gas industry. He said, "there can be some very bad practices" in the production of the resources and a commission is needed to control the practices. Oil and natural gas production is a $50 million a year industry in Nebraska, Bixler said.

Leading the fight against revival of the bill were two senators who had signed as cointroducers of the measure—Carpenter of Scottsbluff and Kotouc of Humboldt.

New York

Utility Relocation Cost Bill Passed

A BILL to relieve public utility companies of the cost of relocating poles, wires, conduits, and pipes in connection with construction under the federal-aid highway program was given final passage by the state legislature last month and sent to the governor for signature.

With the exception of the New York State Thruway, utilities in New York state heretofore have had to pay the cost of relocating their property when necessitated by highway construction or reconstruction.

Tennessee

Compromise Highway Bill Signed

GOVERNOR Clement recently signed into Tennessee law a compromise bill providing for payment of removal costs of utility lines from highway rights of way under the federal-aid highway program.

The act authorizes the state to pay costs of removal on interstate-controlled access highways, but the utilities will be required to assume the costs on other primary and secondary roads unless they can prove real hardship.

The compromise measure was worked out after the state highway commissioner objected to an earlier bill which would have required the state to pay all such costs of relocating utility facilities under the new road program.

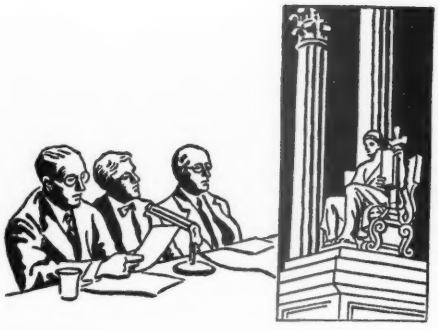
Wisconsin

Commission Appointment Confirmed

THE state senate recently gave unanimous confirmation of Governor Vernon W. Thomson's appointment of Arthur L. Padrutt to a full six-year term on the three-member state public service commission.

Padrutt has been serving on the commission since December, 1955, when he was appointed by former Governor Walter J. Kohler to fill the unexpired term of James Durfee. Durfee resigned to become chairman of the CAB.

Padrutt, a Republican, is a veteran of several terms in the state legislature.



Progress of Regulation

Trends and Topics

Recent Views on Cash Working Capital

An allowance for cash working capital is intended to compensate investors for capital which they supply to enable a utility to operate efficiently and economically during the interim between the rendition of service and the receipt of payment. Cash working capital is an element of value to be considered in determining a rate base; it constitutes property used and useful in the furnishing of service.

The amount, however, if any, of cash working capital to be allowed in a rate proceeding is a question of fact in each case. The California commission has observed that evaluation of the lag in collection of revenues and payment of expenses is extremely helpful, but the arithmetical results of such a computation are not binding; the commission will base its judgment of future requirements upon the entire record (99 PUR NS 242). In numerous cases, a working capital allowance has been entirely eliminated where the operations of the business provide the requisite amounts, for a return can be allowed only on that portion of working capital which is furnished by the investors.

An allowance will be made, in the words of the Federal Power Commission, "when it is demonstrated by substantial evidence that the utility must provide cash from its own funds to meet necessary operating expenses" (94 PUR NS 333). This necessity arises when current operating revenues are not received until after expenses from current operations must be met by cash outlay.

Short-term Credit and Balance Sheet Position

In a 1952 telephone case, the Pennsylvania supreme court recognized the ability of a company to obtain temporary loans without adverse effect on its credit as a matter to be considered in determining a cash working capital allowance (94 PUR NS 353). There might well be a considerable difference between the rate of return allowable on working capital and the interest rate at which a strong company can secure short-term loans to meet operating needs. In the same decision, the court indicated that a company's balance sheet position, if

material at all, is one of the least important factors in arriving at a proper allowance, since fluctuations in cash and current asset position are controlled by managerial policy and have little to do with cash working capital requirements.

Similarly, the Vermont commission has held that the working capital requirement cannot reasonably be determined from the difference between current assets and current liabilities. The method was said to be unsound because it would include in the working capital allowance such items as surplus cash on hand and cash held for payment of dividends, interest, and debt retirement (82 PUR NS 601). Not inconsistent with this view, the Arkansas commission allowed working capital though the company at no time had a balance of current assets over current liabilities (87 PUR NS 97).

In these inflationary times it is interesting to note the pronouncement of a federal district court that a utility should be allowed a correspondingly greater working capital in a period of rising prices (76 PUR NS 10).

Particular Items Included or Excluded

A number of recent cases have rejected the minimum bank balance as an item in the cash working capital allowance. The Maine commission refused to include a minimum bank balance necessary to avoid payment of bank service charges, pointing out that the addition of this item to its allowance of forty-five days' operating expenses (less depreciation and taxes) would be a duplication and confusion of methods. It was noted, moreover, that the payment of the service charges and their inclusion in operating expenses would cost the ratepayers much less than the return they would have to pay on the minimum bank balance requirement (92 PUR NS 46). Other authorities have recently refused to include minimum bank balances (15 PUR3d 308; 88 PUR NS 272; 81 PUR NS 274), though the Arkansas commission indicated in a 1955 gas case that "there is considerable merit" to the claim for that item (disallowed, however, on other grounds) (10 PUR3d 407).

None of the working capital of a parent company will be included in the rate base of an operating telephone company, said the Michigan commission (5 PUR3d 301). Nor can there be included any cost to the parent of holding funds in readiness to make loans to operating companies (85 PUR NS 327).

Provision for contingencies such as floods and fires has been denied in the working capital allowance (82 PUR NS 193), as have uncollectible accounts (10 PUR3d 279). The Minnesota commission, in a transit case, excluded from working capital such items as pensions, group insurance, bus rental, interest, payments on principal, and supervisory payroll, though they were claimed as emergency expenses which must be met in case of disaster or strike (10 PUR3d 356). In the same case, prepayments for insurance and licenses, workmen's compensation deposits, and amounts for public liability insurance were said to be proper working capital items.

The Massachusetts commission has ruled in a gas case that prepaid expense items, such as insurance, could not be included since they were allowed as

operating expenses and amortized monthly (13 PUR3d 401). The Pennsylvania commission has included in a transit company's working capital as "obvious requirements" such items as prepaid taxes, insurance, licenses, deposit for workmen's compensation, and property rentals, besides petty cash and working funds. A claim for pension cost and loss on feeder bus operations was rejected (81 PUR NS 274).

Accumulated Ratepayers' Funds as Offsets

Accumulated funds collected from ratepayers and held by utilities for future disbursement have been treated in numerous recent decisions as offsets to working cash requirements. (Treatment of tax accruals as an offset was discussed in PUBLIC UTILITIES FORTNIGHTLY, September 1, 1955, at page 355.)

No working capital allowance should be made where expense accruals exceed deferments in income sufficiently to provide adequate margins, the Indiana commission has ruled (8 PUR3d 518). If ratepayers were required to pay a return on working capital while the utility holds accumulated funds which are readily available and sufficient to meet working capital needs, the ratepayers would in effect be paying a return on money which they themselves have supplied. The Louisiana commission has described this effect as an unjust enrichment to the utility (14 PUR3d 146). The Federal Power Commission has held that management policy as to investment of funds currently collected through rates to meet expenses cannot be determinative of the reasonableness of a cash working capital allowance (94 PUR NS 426).

Customers' deposits to secure payment for service, advances on installation charges, collections for future rent payments, and tax accruals, if they are reasonably constant and available for use as working capital, should be set off against the working capital allowance, said the Ohio supreme court (5 PUR3d 251). The Florida commission has ruled similarly (99 PUR NS 129). Funds withheld in connection with employees' salaries and wages, such as social security deductions, taxes, automobile insurance, war bond purchases, union dues, and company association and hospitalization dues, were regarded by the New York commission as available for working capital purposes and treated as offsets (96 PUR NS 194).

The Arkansas commission held that advances for gas line extensions were not deductible where such funds were normally invested in construction within a short time and were constantly being refunded (7 PUR3d 594). Wages accrued but not paid have been treated as an offset (5 PUR3d 301), and a large depreciation reserve which could be drawn on in adverse times was considered by the Nevada commission in setting off other funds against the working cash requirement (90 PUR NS 287). Money in prepayment gas meters, the Maine commission indicated, should be considered in estimating working capital, even though such funds are not collected until a month after deposit (72 PUR NS 145).

Particular Allowances

Recent gas utility cases have generally based working cash on a computa-

tion of one-eighth of annual operating expenses, exclusive of taxes and depreciation. Specific attention is given to the cost of purchased gas. The preponderance of recent electric rate cases calculate working cash from forty-five days' operating expenses.

Of a considerable number of telephone rate decisions handed down during the last few years, the most generally accepted period for computing working capital was thirty days. A sizable part of the cases adopted a period of forty-five days, while a lesser number allowed a 20-day period. The rest of the group, except for one decision which used a percentage of average net plant, granted allowances based on periods of from fifteen to twenty-four days.

About one-half of a group of recent water utility cases used a 45-day period in determining allowable working cash. Most of the other half applied 30-day or 60-day periods.

Observing that transit service is paid for in advance, the Pennsylvania commission rejected a claim by a transit company for working cash to cover a month's operating expenses. A small allowance was made, however, to cover prepayment items mainly, along with a margin for other needs (74 PUR NS 129). The Massachusetts commission has indicated that it will not ordinarily consider working capital for a transit company in the absence of "impelling testimony" (88 PUR NS 21).

Review of Current Cases

Telephone Company's Exclusion of Prices in Directory Advertisements Reasonable

A TELEPHONE company's policy of refusing to include prices in any advertisements placed in its classified directory was found by the California commission to be reasonable and necessary to prevent misleading and unfair advertising. Prices included in advertisements in a directory which is published only once a year, pointed out the commission, would probably become unrealistic in view of changes in cost of labor and materials. Also, it might permit "bait" advertising, which is undesirable.

A customer in the rug cleaning business had complained to the commission that the exclusion of prices, percentages, and discounts in his advertisement had resulted in a loss of business. Evidence was presented showing that the advertisement of one of complainant's competitors included prices.

In view of the fact that there are so many unknown factors bearing on the question of loss of business, the commission was unable to make a finding that the removal of prices from the advertisement had resulted in a material loss of business for the complainant. The fact that prices had been included in the competitor's advertisement was not considered arbitrary or discriminatory since the evidence showed that the inclusion was the result of a mistake on the part of an employee.

Supervision of Advertisements

The publication of advertisements and the listing of businesses in a directory were

considered vital to the proper rendition of service and within the regulatory jurisdiction of the commission. However, said the commission, because the telephone company, in publishing the directory, is itself a party to any representations therein and to any practices carried on by advertisers therein, it has the duty as well as the right to see that the public is treated fairly and honestly. A reasonable amount of supervision and the determination of proper policies as to the content of advertisements published should be permitted company management as long as the policies are not discriminatory.

It appeared desirable to the commission, since some of the company policies were of such vital importance to subscribers, that they be incorporated in rules and regulations filed with the commission. If so filed, the commission would be in a better position to aid the telephone company in the development of policies. Also, the filing would blunt the effect of charges that the company was acting like a legislature and was also acting arbitrarily. Without prior filing, the commission said, the company is taking upon itself more of a risk in that the commission could not in any sense be considered as having previously considered and passed upon such a rule or policy determination. *Serpa, Jr. v. Pacific Teleph. & Teleg. Co. Decision No. 54355, Case No. 5787, January 8, 1957.*

Panhandle Prepayments of Refund Held to Consist of Both Principal and Interest

THE Federal Power Commission ruled that Panhandle Eastern Pipe Line Company could properly reduce its refund liability for overcharges by making partial payments before the date designated by the commission for final settlement, but only as to those customers which accepted the payments. However, such payments were held to represent both principal and the interest on such principal, though they purported to represent principal only.

Right to Refuse Prepayments

All of the prepayments were accepted by the distributing companies except for two payments tendered to Michigan Consolidated Gas Company. The commission disagreed with the presiding examiner that the pipeline had a right to repay the excess charges at any time prior to the final order. Panhandle's customers might have an interest in not receiving prepayments of refunds.

One objection to partial refunds, it was noted, is that they might require multiple and, therefore, more expensive refunds by the distributors to the ultimate consumers. The commission held that Michigan Consolidated was entitled to reject the two tenders of prepayments (though it accepted a third prepayment) not only because they purported to represent principal alone but also because they were only partial refunds which the customer might reject in any case.

No Binding Implied Contract

In holding that the prepayments should represent both principal and the interest on such principal, the commission thought it was irrelevant that the partial payments which were accepted might have resulted in an implied agreement that they were to consist wholly of principal had the parties been ordinary debtor and creditor. For the payments, and the manner of making

them, were subject to the commission's regulatory control.

There would be no justification, it was said, for allowing the ultimate consumers to be bound by the effect of implied contracts made by their distributors. Nor should Panhandle be permitted to impair the interests of its distributing companies, which presumably accepted the payments subject to continuing regulation. By requiring that the prepayments represent both principal and interest, the commission concluded that all interests concerned would be protected.

Tax Savings and Overrun Question

Panhandle was allowed to retain the benefit of any tax savings associated with the payment of interest on the amounts to be refunded. The commission observed that when the pipeline company has credited its customers with 6 per cent interest, it will have discharged its obligation under the commission's orders requiring payment of principal "together with interest at the rate of 6 per cent per annum." Furthermore the company has been obligated to stand ready to refund the excess charges.

Because of this burden, said the commission, it is equitable that the benefit of any tax savings inure to Panhandle and not be passed along in the refunds to its customers.

Disagreeing again with the presiding examiner, the commission ruled that an overrun adjustment claim by Panhandle against one of its customers could not be considered in this refund proceeding. The commission felt that its order providing for the hearings in this proceeding did not bring in the overrun adjustment. *Re Panhandle Eastern Pipe Line Co. et al. Docket Nos. G-1116 et al. February 5, 1957.*

Rehearing Denied on Gas Producer Rate Increase Sought on Bargaining and Market Value Evidence

THE Federal Power Commission denied petitions for rehearing of its recent decision (16 PUR3d 112) dismissing applications by independent natural gas producers for contract rate increases. Had the increases been approved, they would have raised the producer rates to Transcontinental Pipe Line Corporation from 9.797 cents per Mcf to 17 cents per Mcf.

The evidence presented in the original proceeding showed that the increased rates were arrived at by arm's-length bargaining and that they were within the range of field prices in the pricing area in southern Louisiana. But the evidence did not show what rates were needed to encourage exploration for, and production of, gas reserves. It did not, in the commission's view, prove the justness and reasonableness of the proposed increases.

Producer Rate Standards

The petitioners, in the instant proceeding, sought to have the record reopened to allow the producers to present evidence of their financial requirements and an appropriate rate base and cost of service applicable to sales to Transcontinental. As a reason for their failure to submit such information in the normal course of the proceedings, the petitioners pointed out that the commission's Order No. 174-B did not require independent producers to maintain records on a cost basis in accordance with the Uniform System of Ac-

counts prescribed for natural gas companies. The commission observed that the order had merely attempted to ease the regulatory transition of independent producers. But the relaxation of procedural rules under Order No. 174-B afforded no basis for concluding what substantive proof would be necessary in a rate proceeding.

The commission referred to its action terminating the proceedings in Docket R-142 (consideration of methods to be applied in fixing independent producer rates) without promulgating standards for determining the reasonableness of producer rates. Nor from this action, it was declared, could an interpretation be warranted that cost evidence would not be considered necessary.

The petitioners noted that the commission might have prescribed standards at various stages of these proceedings. The commission pointed out that under § 4 of the Natural Gas Act it is the affirmative duty of the natural gas company to take the initiative in filing just and reasonable rates.

Rate Base and Cost Evidence

Answering arguments of the petitioners, the commission noted that City of Detroit *v.* Federal Power Commission (11 PUR3d 113) does not require adherence to the traditional rate base method in regulating rates of natural gas companies under § 4 of the act. "What it does require is the presentation of rate base and cost evidence as a point of departure plus a showing that any additional allowance is no more than is reasonably necessary for the purposes advanced for an increase." Since the instant record contained no such basic evidence, the commission could not prescribe any standards for determining what additional allowance, if any, would be reasonably necessary. The substantive statutory and constitutional standards interpreted in the City of Detroit case, the commission indicated, are applicable to the rates of all natural gas companies, whether interstate transmission companies or independent producers.

Jurisdiction

Again the petitioners affirmed their reliance upon the Mobile case (12 PUR3d 112) as support for the proposition that the commission did not have jurisdiction to review their rate increases under § 4 of the act. They asserted that the increases should be allowed as initial filings because they were negotiated prior to June 7, 1954, the date of the Phillips decision. It was said that the 2-party favored-nation provision in the contract with Transcontinental contemplated the increased rates as part of the contract. Neither argument, said the commission, contradicts the fact that the proposed 17-cent rates would change the 9.797-cent rates in effect as of June 7, 1954. That the increases may have been negotiated prior to June 7, 1954, or that another contract negotiated prior to that date may have contemplated unknown and uncertain increases is immaterial.

It was observed that Regulation § 154.94, issued pursuant to §§ 4 and 16 of the act, provides that no change shall be made in any rate in effect on or after June 7, 1954, by an independent producer required to file rate schedules, without first filing a change in rates under § 4 (d). The regulations define a rate change to include the operation of any provision of the rate schedule for changes after June 7, 1954, or the operation of any like provision in any initial rate schedule filed after that date.

The commission concluded again, as in the original opinion, that it was not possible on the record made in these proceed-

ings "to strike a fair balance between investor and consumer interests." Use of rate-making standards as broad as those proposed, said the commission, would permit the unregulated market to determine rates in the name of regulation, contrary to the direction of the Natural Gas Act. No new facts or circumstances were shown which would warrant reopening of the record. *Re Union Oil Company of California et al. Docket Nos. G-4331 et al. January 31, 1957.*

Utility Operating at Loss Authorized to End Service

IT is beyond the power of the commission to compel continuance of utility operations which can be conducted only at a loss, said the California commission in a recent decision authorizing a small water utility to discontinue service.

Abandonment was permitted even though apparently no other provision was made for the twenty-three patrons of the utility. The individuals who operated the service had exhausted their financial resources in the face of requirements by health authorities for relatively large-scale improvements in the system. Capital could not be obtained through borrowing, and the commission found that revenues which might be generated by any reasonable increase in rates would be insufficient either to provide needed cash for the improvements or adequately to service the debt if it could be and were undertaken. The commission further found that the utility could not be conducted in the future except at a loss.

To compel a continuance of operations in these circumstances, the commission declared, would constitute a taking of property without just compensation. *Re Jellenc, Decision No. 54422, Application No. 38550, January 22, 1957.*

ICC Intrastate Railroad Rates, Higher Than State Rates, Set Aside

THE United States district court reversed an Interstate Commerce Commission order authorizing a railroad to effectuate intrastate passenger rates higher than those which had been authorized by the state commission. The court found that the evidence was insufficient to support the ICC's findings.

A controlling inquiry in determining intrastate fares, pointed out the court, is what contribution from the intrastate traffic would constitute a fair proportion of the railroad's income. It was not sufficient that the ICC had found the prescribed rates would make a fair contribution toward indirect costs and return on investment. A fair proportion of a carrier's total income is not the same as a contribution to indirect costs and return on investment.

Nor was it sufficient that the commission had found that, to the extent that certain service failed to meet the out-of-pocket costs and make all the contribution that it reasonably could to the railroad's indirect cost, it discriminated against freight operations. This finding, said the court, is no substitute for one as to what it should contribute as a fair proportion and share of total income. Without the latter finding the order of the commission could not stand.

If a contribution is to be made toward the satisfaction of an obligation, said the court, the extent of the obligation must be fixed. Otherwise no one would know what the size of the contribution should be. The commission's finding was reminiscent of public fund-raising campaigns which used as their slogan "Give till it hurts." That was a legitimate civic or patriotic appeal, said the court.

The situation in this case involved the imposition of an involuntary contribution being exacted by legal means. To be sustained, it had to be based upon a finding of the extent of the obligation. It could not be supported by a vague reference to an unascertained amount of "indirect costs and taxes" or what the service could reasonably contribute to indirect costs, or a fair contribution toward indirect costs and return on investment. *Illinois et al. v. United States et al. 146 F Supp 195.*

Truck Owner Held Contract Carrier Despite Shipper's Lease Agreement

A TRUCK owner, contending that he was a private carrier, and citing a lease equipment agreement with the shipper as proof, was held by the Arkansas supreme court to be a contract carrier required to procure a permit.

The agreement provided for lease of a truck by the owner to the manufacturer. The owner was to drive the truck and was to be paid according to the number of miles the truck was used in the manufacturer's business. The owner was responsible for all costs of operating the truck or any damage thereto. The manufacturer could designate routes and direct use of the truck.

The commission had conceded that neither the company nor the owner had used bad faith in making the arrangement. There was nothing illegal or wrong in the lease agreement per se. However, the agreement did not prevent the owner from being a contract carrier under the statutes and the facts.

The commission also held that requiring a permit did not impose a burden upon interstate commerce. *Robinson et al. v. Woodard, 296 SW2d 672.*

Injunction against Terminal Operators Denied

MOTOR carriers' petitions to enjoin waterfront terminal operators from enforcing a tariff pending a hearing and final determination before the federal Maritime Board was denied by the United States district court. The court held that the carriers' evidence had not adequately demonstrated either irreparable injury or a balance of the equities in their favor to warrant the temporary injunction.

The equitable power to suspend operation of a tariff by injunction, said the court, is discretionary and should be exercised only after a balance of the harms the injunction might do the opposing parties. The carriers might in fact suffer irreparable injury, but the showing made merely demonstrated apprehension rather than imminence of injury.

The truckers had claimed that unless they absorbed the increased rates, to their financial detriment, they would lose customers to the lighterage companies and that customers would also divert freight from the Port of New York to other ports. The competitive situation between

truckers and lighters, answered the court, was not sufficiently set forth so that reliable conclusions could be drawn. Nor was it possible to conclude that there was likely to be a diversion of freight. The terminal operators, pointed out the court, had as much at stake in the prosperity of the port as the truckers.

The carriers had maintained that the tariff sought to be enjoined was more than an implementation and extension of the originally approved conference agreement, that it was in itself an agreement requiring approval under statute. Inasmuch as there had been no board approval, it was argued that the effectuation of the unapproved agreement was illegal, warranting temporary injunctive relief.

The court concluded that the issue had not been raised for the federal Maritime Board's consideration. It was certainly one appropriate for the exercise of the agency's primary administrative jurisdiction before application to the court. *United States Trucking Corp. et al. v. American Export Lines, Inc. et al. 146 F Supp 924.*

Orthodox "Rate of Return" Concept Not Applied to Liquefied Petroleum Company

THE New Mexico commission did not regard the statutory mandate which prescribes the tests of just and reasonable rates as one of such rigidity as to compel unjust results when applied to a liquefied petroleum gas company's application for increased rates. The commission considered the concept of a "rate of return" wholly valid with respect to large utility operations, but not wholly determinative in the instant case. The company, pointed out the commission, might be unable to justify a substantial dollar return in terms of the concept of rate base, but nevertheless had to cope with operations of a scope which seemed to justify the application of additional tests of reasonableness.

Competition Factor

For example, the tremendously competitive nature of the liquefied petroleum gas business, as compared with the business of public utilities providing natural gas or electric service to the public, was evident to the commission. Natural gas and electric utilities, said the commission, have carved out an area of "commodity preference" within which, subject to reasonable limits, considerations of economy, cleanliness, convenience, and the like tend to insulate the service from direct competition of other services useful for the same purposes. In the case of liquefied petroleum gas, the utility serves the commodity in daily and direct competition with others who serve the identical commodity in identical form, and who operate free of the kind of regulation, regulatory fees, and franchise taxes to which the utility is subject.

Value of Service

The competitive nature of the business, said the commission, suggests that the concept of "value of service" may be entitled to greater weight than generally is the case in rate proceedings, for unquestionably the customer has a speedy and effective remedy against rates deemed excessive. The commission also considered the small size of the company's operation and the relatively high interest rates often required to enable such an operation to obtain needed capital funds.

The company had made a genuine effort to rehabilitate a deteriorated system in

the relatively brief period of its operation. In order to be able to meet reasonable operating expenses and other operating revenue deductions, provide sufficiently for debt service requirements, maintain its financial integrity, and permit attraction of sufficient capital for proper development and extension, a dollar return which was relatively high had to be provided. Although such sum might be viewed as excessive if judged by orthodox standards, rates sufficient to provide such dollar return were justified under the peculiar circumstances of the case. *Re Ray (Tularosa Basin Gas Co.) Case No. 483, February 21, 1957.*

Sale of Telephone Company Approved

A TELEPHONE company's application for authority to transfer its works and system to another telephone company was approved by the New York commission. The selling company's stock was wholly owned by a gas and electric company. The latter claimed that its investment in the telephone company could be used to better advantage in financing the necessary extensions and improvements in its gas and electric service and that the time of its officers devoted to the telephone company's affairs could be used to better advantage in its own business.

The commission noted that the telephone company, if independently financed, would require higher interest rates and incidental costs than under the present set-up. However, said the commission, it could be argued that the maintenance of the telephone company was a burden upon the gas and electric subscribers.

There was a community of interest between the buying company and the selling exchange. Subscribers of the selling company would benefit by the transfer since it would result in eventual elimination of the presently existing toll charge.

Purchase Price

The debt securities of the selling company would be called without premium and paid. The purchase price had been arrived at by arm's-length bargaining. In passing on transfers of utility property, said the commission, tolerance has been permitted, except under the most unusual circumstances, where the difference between the purchase price and the book figures was to be charged to surplus and did not exceed 10 per cent. The price in this instance was within such zone of tolerance. It was not necessary to pass upon the weight which should be given to the reconstruction value of the plant. The sale was approved. *Re Cornwall Teleph. Co. Case 18024, February 18, 1957.*

Denial of Street Opening Permit Unreasonable

A POWER company's application for an order directing a municipality to grant permission for construction of a natural gas transmission main in certain streets was approved by the New York supreme court. The commission had approved the safety of the proposed main and a county franchise gave the company the right to install the main. The court held that the village's refusal to grant the company a permit was arbitrary and unreasonable.

A particular village could not exclude gas mains from streets because that vil-

lage was not to be supplied with gas from the proposed mains. Where, as here, a county franchise for laying the mains existed, a certificate of public convenience and necessity was not required.

Municipal Powers

The company had the franchise and right, and furthermore the duty, subject to reasonable regulations, to erect and maintain the proposed main, and no local governmental unit could nullify or interfere with that right and duty. A municipality's power to adopt zoning laws in the interest of public welfare does not permit the local legislative body to override state law and policy.

A municipality, especially one using particular public utility services, may not dump the undesirable facilities necessary to furnish such services upon the lap of an adjoining municipality. It is the province of the company to lay out, locate, and maintain particular lines provided it acts in accordance with state law and policy. Its discretionary powers and actions in that respect may not be questioned by local authorities and are not subject to court supervision, provided the exercise is in good faith and in accordance with valid regulations.

The commission was established for the purpose of promoting uniformity and consistency in authoritative directions to be given to public utilities, to constitute a tribunal trained to consider and determine controversies and problems relating to utilities, and to direct and supervise their relations with the public as their patrons. A construction that would permit any municipality to disregard commission orders would not only cause confusion of authority but would make the commission's work ineffectual. *Long Island Lighting Co. v. Incorporated Village of South Floral Park et al. 158 NYS2d 878.*

Small Telephone Utilities Acquired by Corporation At Net Book Value

THE Missouri commission authorized the transfer of a small, individually owned telephone company to a newly formed corporation, there being no evidence of detriment to the public. The purchasing company indicated that it would undertake to improve the service by installing dial equipment.

The sale was approved on the basis of net book value. The financial arrangements, however, involved two of the company's directors in their individual capacities.

A contract provided for payment partly in the company's preferred stock issued to the sellers, a part in cash paid by two directors of the company, and payment of the balance by the two directors in monthly instalments over a 10-year period, with the company issuing common stock to these directors to be pledged, in turn, to secure payment of the instalments. By these arrangements the company would have no debt on its books for the acquisition. *Re Royce et al. Case No. 13,591, February 19, 1957.*

In a separate proceeding the commission also authorized the company to acquire another small telephone utility owned and operated by the two directors, making payment in common stock at the net book value of the acquired plant. *Re Rhine et al. Case No. 13,590, February 19, 1957.*

Rate Increase for Future Plant Improvement Denied to Municipality

THE Wyoming commission turned thumbs down on a municipality's application for increased rates. The city would not be allowed, said the commission, to charge rates for water utility service which would permit it to make major improvements to the municipal waterworks and retire water bond indebtedness out of rate income. Capitalization for such purposes should be secured through the issuance of general obligation bonds and such bonds should be retired through taxation. Rate income should be used for the payment of operating and maintenance expenses, including depreciation, the cost of usual improvements, and extensions.

If the city were allowed to continue to retire outstanding general obligation bonds entirely out of revenues derived from the municipally owned water utility the practice would amount to an approval of the conversion of such bonds to revenue bonds, which the municipality was not authorized to issue. The commission did not think the city should be allowed to do indirectly what it could not do directly.

The commission did not think much of a proposed fiscal policy which would create a large surplus in the funds of the water department for unidentified projects through the proposed new rates. Such a policy was highly questionable. Furthermore, the proposed method of making future improvements discriminated between present and future water users. It would require present consumers to pay higher rates for improvements they might never enjoy. *Re City of Sheridan, Docket No. 9313, January 28, 1957.*

Two Approaches Open to Transit Company Management To Solve Financial Problems

THE New York commission, in granting a transit company's application for increased fares, pointed out that the commission's duty, on the one hand, was to see that mileage was not cut to the extent that there was interference with adequacy of service and, on the other hand, that resources were not wasted so that exorbitant fares were required.

Numerous inducements have been offered and sales promotion devices used by transit operators in an attempt to counteract the continuing decline in passenger volume, said the commission. These include free parking areas at city perimeters with direct express service to downtown areas, special rates for shoppers in off-peak periods, and arrangements with downtown merchants to provide free bus transportation on purchases of a given amount of merchandise. Basically, however, there are, in addition, two differing approaches to the search for a solution.

The first approach is the elimination of unneeded and unprofitable mileage. This involves the continuous study of every route and the lengthening of headways or the adjustment of the pattern of service to meet declining and changing trends in riding. The second approach is the attempt, by improving the quality of service, to retain the old and attract new customers.

Which method is the better of the two in a particular instance is not for the commission to determine. It is largely a mat-

ter of policy within the discretion of management. It may be that conditions in differing localities with varying riding patterns might well lead to sound though contrary judgments. This is not to say, however, that judicious mingling of both approaches might not under some circumstances produce results.

Service Improvements

In the instant case, the bus company's management has emphasized the second approach. Its fleet is one of the most modern in the nation. The company has won national awards for efficiency in maintenance, and the quality of service rendered by it had been favorably commented upon by the local press. At the hearing the company stressed the need for a comprehensive study of off-peak riding and changing riding patterns to the end that needed economies might be effected without impairing the adequacy of service. Increased fares were granted upon a showing that wage commitments and the continuation of the downward trend in riding justified them. *Re Niagara Frontier Transit System, Inc. Case 18098. February 18, 1957.*

Other Recent Rulings

Surcharge for Underground Electric System. In view of the high cost of underground electrical distribution systems, the California commission authorized an electric company to apply a surcharge for service from underground systems when it is forced to install such facilities at its own expense in places where an overhead system would be practical. *Re Southern California Edison Co. Decision No. 54384, Application No. 37665, January 15, 1957.*

Electric Property Transfer. The New York commission ruled that its consent must be obtained before an electric generating company selling energy to a public utility and an industrial customer may sell its operating property. *Re Wadhams & Westport Power & Light Corp. Case 17982, January 28, 1957.*

Grandfather Certificate. The Illinois supreme court held that the Motor Carrier of Property Act could not be construed as intending to provide for issuance of a grandfather certificate to a motor carrier which would enlarge or expand the extent of the operation authorized under the Illinois Truck Act. *Schultz v. Illinois Commerce Commission, 139 NE2d 202.*

Motor Express Certificate. The Alabama supreme court upheld the state commission's authority to grant a bus company a certificate to transport express packages in nonpassenger-carrying vehicles. *Railway Express Agency, Inc. v. Alabama Pub. Service Commission et al. 91 So2d 489.*

Water Rate Increase. The Pennsylvania commission approved a rate increase for a water company where it appeared that the return from the higher rates, if capitalized on the basis of replacement cost of capital (5.50 per cent), advocated by opposing parties, would be well within the zone of reasonableness when compared with the trended reproduction cost rate base allowed by the commission. *Platt et al. v.*

Scranton-Spring Brook Water Service Co. C. 15903, 15908, January 21, 1957.

Transit Fare Increase. The Massachusetts commission authorized a transit company to increase fares so as to produce an operating ratio of 96.96 per cent. *Re Holyoke Street R. Co. DPU 12020, January 31, 1957.*

Electric Rate Simplification. The New Mexico commission authorized an electric company to simplify a complex, historical rate structure found to be susceptible of discrimination and lacking in uniformity, upon a showing that no rate increase was involved but that the level of revenues under the various classifications of service would remain unchanged. *Re Southwestern Pub. Service Co. Case No. 475, January 25, 1957.*

Water Main Installation. The New Jersey superior court held that a municipality has statutory authority to require a subdivider to install water mains where the water system is operated by the municipality. *Lake Intervale Homes, Inc. v. Township of Parsippany-Troy Hills, 128 A2d 300.*

Picketing and Service Obligation. The Tennessee court of appeals held that a contract between a carrier and its employees exempting the employees from the duty to render service at picketed plants does not excuse the carrier and its employees from performing its public duty of carriage since the contract binds only the parties thereto and does not affect the rights of third persons. *Kerrigan Iron Works, Inc. v. Cook Truck Lines, Inc. 296 SW2d 379.*

Television Permit Modification. The United States court of appeals held that the Federal Communications Commission's summary dismissal of an unsuccessful applicant's protest was improper where, after a television construction permit had been granted to the successful applicant, the commission had modified the permit to allow decrease in the height of the antenna with resulting reduction of station coverage. *McClatchy Broadcasting Co. v. Federal Communications Commission, 239 F2d 19.*

Gas Extension Contribution. The Maryland commission ruled that a gas company's regulations which contemplated that its investment in main extensions should be compatible with revenues to be derived from the extensions, and which required customer contribution toward installation cost above specified allowances were neither unreasonable nor discriminatory as contended by an association of fuel oil distributors. *Oil Heat Asso. of Maryland v. Baltimore Gas & E. Co. Case No. 5472, Order No. 52641, February 13, 1957.*

Bus Service Controversy. The North Carolina supreme court held that the commission had exclusive jurisdiction over a controversy between municipal officials and a bus company with respect to changes in routes or curtailment of existing services. *City of Winston-Salem v. Winston-Salem City Coach Lines, Inc. 95 SE2d 510.*

Stock Offering Price. The New York commission authorized an independent telephone company to issue common stock to reimburse its treasury and provide funds for plant modernization, limiting the offering price to not less than 85 per cent of the bid quotation on the day the price had been fixed in order to allow for flexibility and in view of the fact that the

company's common stock was not actively traded. *Re Rochester Teleph. Corp. Case 18197, February 18, 1957.*

Competing Gas Applications. Noting that no new facts or circumstances had been shown, the Federal Power Commission denied rehearing and request for stay of orders in its recent decision (16 PUR3d 277) in favor of Natural Gas Pipeline Company of America on competing applications by that company and Loan Star Gas Company for authorization of facilities. *Re Natural Gas Pipeline Co. of America et al. Docket Nos. G-4280, G-4283, G-8763, January 31, 1957.*

Donations and Entertainment. Amounts claimed by a taxicab company for donations and entertainment were disallowed by the Connecticut commission as an operating expense. *Re Rates for Taxicab Service, Docket No. 9429, February 25, 1957.*

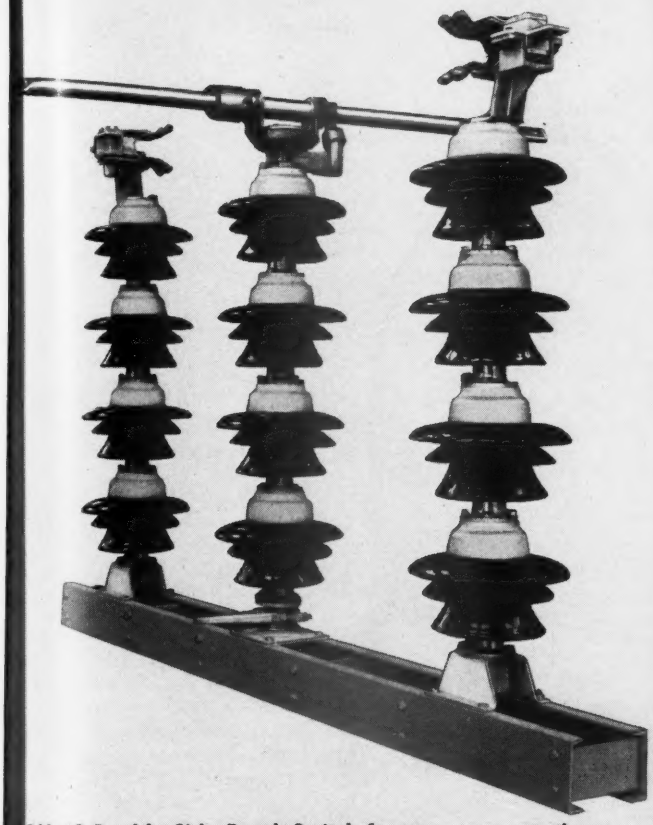
Telephone Separations Plan. The Vermont commission found that the Modified Phoenix Plan should be adopted by a telephone company as the criterion for separations procedures. *Re New England Teleph. & Teleg. Co. No. 2738, February 5, 1957.*

Notice in Rate Case. Denying rehearing, the Indiana supreme court ruled that it was not necessary for an electric company to specify particular ratepayers in notices of a rate proceeding, even though no increase was proposed to be applied to one ratepayer, a co-operative which purchased power from the company; statutory notice was adequate, and the co-operative must be charged with knowledge of the commission's authority to devise its own schedule of rates. *Indiana ex rel. Public Service Commission et al. v. Boone Circuit Court of Boone County et al. 139 NE2d 522.*

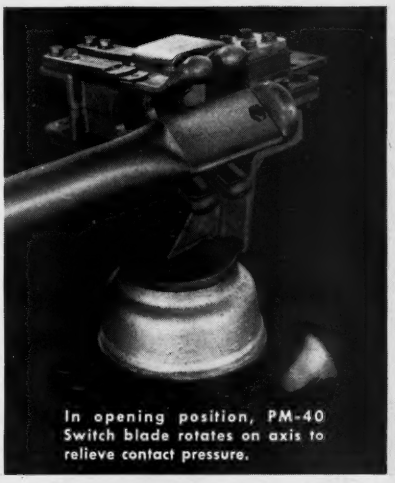
Intrastate Rail Rate Increase Upheld. A federal district court has upheld a 1956 Interstate Commerce Commission order granting Utah railroads an intrastate rate increase of 15 per cent in keeping with an earlier interstate increase, where such intrastate rates were found on adequate evidence to be abnormally low and not providing their fair share of revenues to which the railroads were entitled. *Utah Pub. Service Commission v. United States, 146 F Supp 803.*

Evidence in Construing Certificate. A federal district court, in an action to enjoin an Interstate Commerce Commission order limiting a motor carrier's authority, ruled that an original certificate and subsequent certificates were competent evidence in a commission proceeding to determine the area of operating authority which, as set forth in the carrier's certificate, was functionally ambiguous. *Jones Truck Lines v. United States, 146 F Supp 697, December 12, 1956.*

Accelerated Depreciation Accounting. The Missouri commission authorized two utilities to adopt an accounting procedure for accelerated depreciation, whereby a reserve account would be used for deferred federal income taxes. *Re Joplin Water Works Co. Case No. 13,618, February 26, 1957; Re United Teleph. Co. of Missouri, Case No. 13,608, February 8, 1957.*



PM-40 Double-Side-Break Switch features easy-rotating blade, high pressure silver-to-copper contacts, factory-sealed insulator bearing, and heavy duty construction. Voltage ratings, 115 to 330 KV; 600 to 1600 amperes.



In opening position, PM-40 Switch blade rotates on axis to relieve contact pressure.

In closing position, PM-40 Switch blade moves from 45° to 90° angle to lock easily and securely.

ere's easy, positive operation with elta-Star's PM-40 Side-Break Switches

The ease of operating Delta-Star's PM-40 Double-Side-Break starts with its engineered simplicity. The rotating blade operates by over-toggle mechanism on a center rotating insulator. Balanced spring arrangement reduces operating effort when switch is opened or closed.

The simplified blade-actuating mechanism exerts enough power to easily break ice or corrosive formations—assuring ease of operation at all times.

PM-40 contacts are straight-line current path design with no offset to produce stress during fault currents. Tubular switch blade is one-piece, hard-drawn copper, with silver inlay contact points. The blade rotates on a factory-sealed, ball-bearing base.

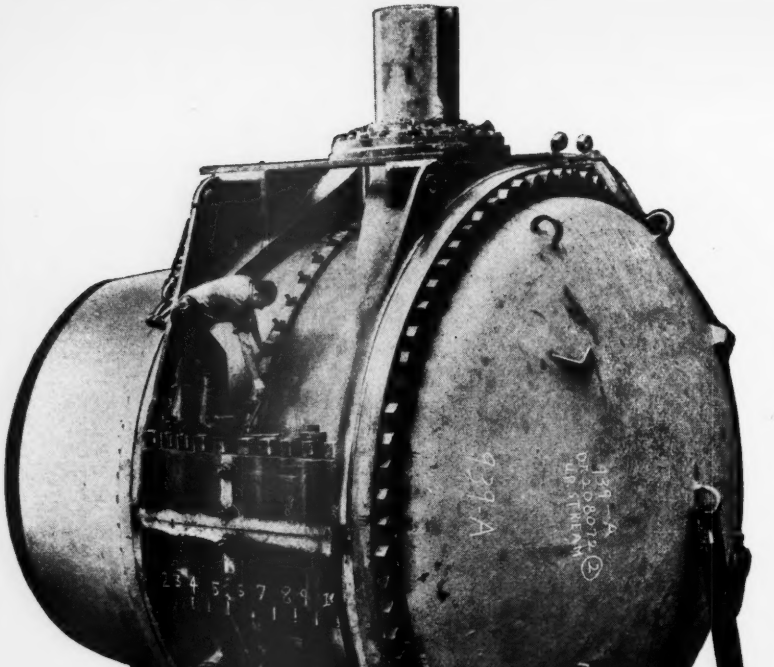
Where you prefer or require side-break switches in voltage ratings of 115 to 330 KV, the Delta-Star PM-40 definitely deserves first choice consideration.

Call Delta-Star Electric Division,
H. K. Porter Company, Inc., Chicago 12, Illinois.
District offices in all principal cities.

HKP DELTA-STAR ELECTRIC DIVISION

H. K. PORTER COMPANY, INC.

Divisions of H. K. Porter Company, Inc. are: Connors Steel, Delta-Star Electric, Henry Disston, Leschen Wire Rope, Quaker Rubber, Refractories, Riverside-Alloy Metal, Vulcan Crucible Steel, W-S Fittings.



This 16-Foot Butterfly Valve ill
trates the type of work which Ne
port News takes in stride. Newp
News built 3 such valves, e
weighing 446,000 lbs., for the R
Power Plant, Skagit Project,
partment of Light, City of Seat
Washington. Designed for a w
flow of 3,620 cu. ft. per sec., an
hydrostatic pressure of 290 p
these valves were shop tested
Newport News at 450 psi. They
hydraulically operated with oil
1,500 psi. pressure. Shop tests ass
speedy, trouble-free assembly
Newport News built equipment,
the site.

The TEST of a TITAN

Here is one of the largest high head butterfly valves ever built, undergoing a shop test at Newport News. If you had an opportunity to follow this unit from start to finish, you would see *first hand* how Newport News produces massive equipment *economically*. For economy is a basic advantage that results from Newport News' high integration of skill and production facilities.

Large engineering and technical staffs, operating a plant comprising acres of brass, iron and steel foundries, five huge machine shops and other extensive fabricating facilities, have made Newport News one of the world's largest producers of hydraulic turbines, valves, gates, penstocks and other essential equipment... both standard and special in design.

Let us bid on your equipment. Write us today for your copy of *"Water Power Equipment."*

NEWPOR
NEWS

SHIPBUILDING A
DRY DOCK COMP
Newport News, Vir

Industrial Progress

...000,000 Program Planned by ...ouston Lighting & Power

...STON Lighting & Power Com... will spend almost $69,000,000 in ...and approximately $75,000,000 ...lly thereafter "for the next sev... ...ears" in expansion of its facili... ...stockholders were told in the ...ny's 1956 annual report.

...h amounts are by far the largest ...udgeted for construction by the ... The previous one-year high ...n 1954 when $41,900,000 was ...ted for expansion purposes.

... company spent $32,038,000 ...ar for plant facilities.

...erating units now under con... ...ion and on order and which will ...operation by 1960, will almost ... the present plant capacity of ...000 kilowatts, which has been ...up over the past 75 years.

...oston Edison to Spend ...8,000,000 on Construction

...SIDENT Thomas G. Dignan ...oston Edison Company told ...holders at the annual meeting ...y that the company's capital ...litures in 1957 will approxi... $38,000,000, the largest in com... ...istory, and $11,000,000 greater ...n 1956.

... largest project will be the com... ...n of a new generating unit, with ...city of 140,000 kilowatts, at ... station in Everett, scheduled ...into service in the late summer ...7.

.... E. Van Kleeck Joins ...ay & Zimmermann, Inc.

...PH E. Van Kleeck has joined ... & Zimmermann, Inc. as a staff ...ting engineer in connection ...he management and operations ...ties and industrials, it was announced by Thomas W. Hopper, president of the Philadelphia engineering firm.

A former senior engineer with the Philadelphia Electric Company, Mr. Van Kleeck previously had been employed as a gas engineer with the United Gas Improvenient Company and also served as a member of the Naval Manpower Survey Board for the 4th Naval District in the Philadelphia area during World War II.

Northern Natural Gas Proposes $65,662,000 Program

NORTHERN Natural Gas Company recently announced plans to file an application with the FPC to construct facilities to provide service to 213 new communities in Minnesota, Iowa, Nebraska, South Dakota and Wisconsin.

Northern proposes to increase its system salable capacity by 149 million cubic feet per day. Of this amount approximately 47 million cubic feet a day will go to presently connected communities. The increase will bring Northern's total salable capacity to one billion, 345 million cubic feet per day.

The new construction would include approximately 365 miles of main line pipe additions, 1090 miles of branch lines and 29 compressor station additions. Total estimated cost of the additional facilities would be $65,662,000.

Copes-Vulcan to Supply Soot Blowers for Philadelphia Elec. Eddystone Station

THE largest single order for soot blowers ever obtained by Copes-Vulcan Division, Blaw-Knox Company, Erie, Pennsylvania, and perhaps the largest ever placed by a utility, was that received from Philadelphia Electric Company for its new Eddystone Station.

The order includes Selective Sequence control panels, T-30 long retractable soot blowers having 30 and 37-ft. travel, half-'tracts with 19-ft. travel from 18-ft. permanent extension into the furnace, RW-3E wall deslaggers, and air preheater cleaner controls.

Eddystone's Unit 1 is the world's first steam generator built to supply 5,000 psig, 1,200 degrees F total temperature at turbine throttle, and will have an expected heat rate not exceeding 8,200 Btu per kw hr. To be built by Combustion Engineering, Inc., the super-critical-pressure Monotube unit will have a steaming capacity of 2,000,000 lb. per hour. Fuel will be pulverized coal or oil, or a combination of the two.

G-E Bulletin Describes Indoor Oil Circuit Breakers

A NEW 16-page bulletin which describes outstanding features of indoor oil circuit breakers is now available from the General Electric Company, Schenectady 5, N. Y.

Designated GEA-6465, the publication contains pictures and drawings of four types of indoor oil circuit breakers, application information and charts which list ratings, insulation levels, and interrupting capacities of the equipment.

New Penta Formula Increases Life of Poles

A NEW Penta formula known as "Woodtreat," and a different method application, that is said to promise greatly prolonged service life of poles and other standing wood structures, has recently been introduced by Wood Treating Chemicals Company,

(*Continued on page* 26)

St. Louis. According to the announcement Woodtreat has been extensively tested in the laboratory and in the field under a wide range of temperatures and conditions and has been widely acclaimed for its superior penetrating qualities, its adaptability and for its exceptional ease of handling and economy.

A comprehensive technical bulletin No. 1300 on Woodtreat may be obtained without charge from Wood Treating Chemicals Company, 5137 Southwest avenue, St. Louis 10, Missouri.

Story of Electricity Discussed in New Westinghouse Booklet

A NEW booklet entitled "My Teacher's Got Me Stuck" is available from Westinghouse Electric Corporation. The booklet, written and illustrated in comic book format, is intended for distribution by electric utilities to homes, factories, businesses, and as a service to school groups, civic clubs, 4-H clubs and other youth activities. The booklet creates for the reader an intimate picture of the electric utilities and helps him to understand the everyday conveniences, comforts, and luxuries made possible by electricity. Also included is a special section describing the watt-hour meter as one of the most accurate commercial measuring devices in existence.

The booklet is available with or without the utility company's imprint.

For a copy of the booklet and ordering information, write Westinghouse Electric Corporation, P. O. Box 2099, Pittsburgh 30, Pa.

$35,000,000 Expansion Planned By Connecticut Light & Power

THE Connecticut Light and Power Company spent about $22,500,000 on new construction and equipment last year and expects to spend about $35,000,000 in 1957.

Additions to power generating capacity make up an important part of CL&P's construction expenditures, both underway and planned. A new 106,000 kilowatt unit is under construction at its Devon plant, and an order has been placed for a 150,000 kilowatt unit.

CL&P is participating in atomic power programs. It is the second largest investor in The Y Atomic Electric Company plans to start construction thi on a 134,000 kilowatt, press water reactor at Rowe, Mas setts. It is also a member of Power Development Associates

International Trucks Celeb 50th Anniversary

IT WAS in 1907 that a wheeled, two-cylinder "Auto W first bounced over the rutted, roads of America and put In tional Harvester Company in th tor truck manufacturing busine

The company, already well for bringing mechanization t farmer, was giving him yet a useful tool—a motorized farm —built specifically to negotia rough roads between farm and m

Today International Harveste duces the world's most comple of motor trucks, from pickup of 4,200 pounds gross vehicle we

(Continued on page 30)

Publications guaranteed to improve the performance of your

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Both now serving thousands of companies . . . in every industry.

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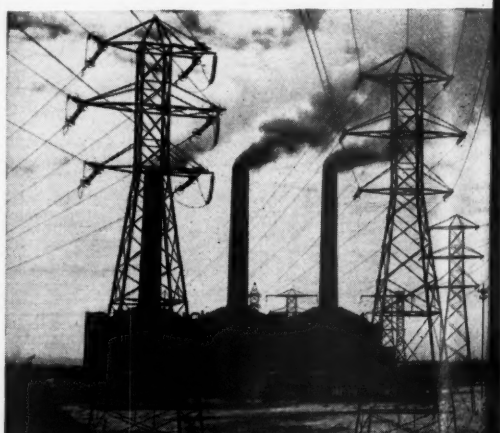

American Appraisals of reproduc cost may affect rates

An American Appraisal report of the cost of rep duction provides convincing evidence in the pre ration of an appeal for adjusting rates to prov a more equitable return.

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...99 Calculator That Prints is the ...recision tool for accurately ap... profit slices. Eminently applic... figuring needs, the Calculator ...s fills the bill in so many busi... very step is proved correct on ...Simpla-Tape and only those fig... ...ntial to the problems are re... ...here's never a confusing cipher

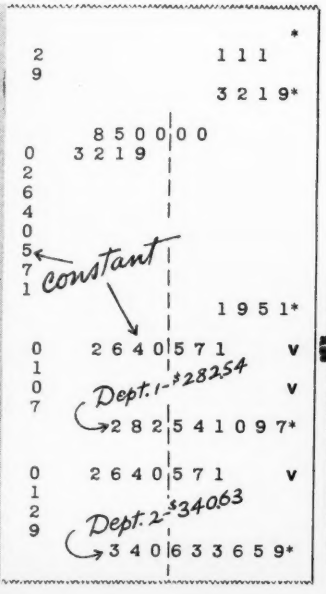
...ur Remington Rand representa... ...urprising office demonstration ...or folder C1096, Room 1438, ... Rand, 315 Fourth Avenue, New ...ew York.

Problem: $8,500 has been allotted for annual bonuses to department heads in XYZ Department Store's Florida Branch. The store did 111% of quota. Determine bonuses on the basis of quotas achieved (100% or over) during the past fiscal year for each of 29 departments.

DEPARTMENT	% OF QUOTA
1. Appliances	107
2. Auto Accessories	129
3. Boys' Clothing	102
etc.	etc.

Method: Multiply overall store percentage of quota (111%) by number of departments above quota (29). Divide this total into bonus amount. Enter this ratio as a constant and multiply by each departmental percentage.

(Partial Tape)



Remington Rand

DIVISION OF SPERRY RAND CORPORATION

A fact for every electric utility

FROM COLD RESERVE TO FULL LOAD IN 60 SECONDS

Impossible? Not at all. For this is a characteristic of Electro-Mobile Power. From a cold start a 1000 kw unit can deliver its full load *in less than sixty seconds.*

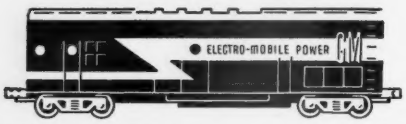
This is true of one or one-hundred units, 1000 kw or 100,000 kw—steady full-load power in far less time than required by any other prime mover, except a spinning unit.

But spinning reserve is *costly* reserve. By letting Electro-Mobile Power supply reserve requirements you not only eliminate running losses, but investment per kilowatt is lower. Efficiency of present stations will improve, too, because generator can be run at a higher load factor.

Further, by placing Electro-Mobile Power at the points of load, transmission loss is reduced and less reserve is required to maintain service. Another advantage: EMP units are available with impulse starting or stopping which permits unattended operation from any location.

How might a multi-megawatt system of Electro-Mobile Power units apply to your system? We'd like an opportunity to sit down with your engineers and discuss it. Contact your Electro-Motive representative, he has the details.

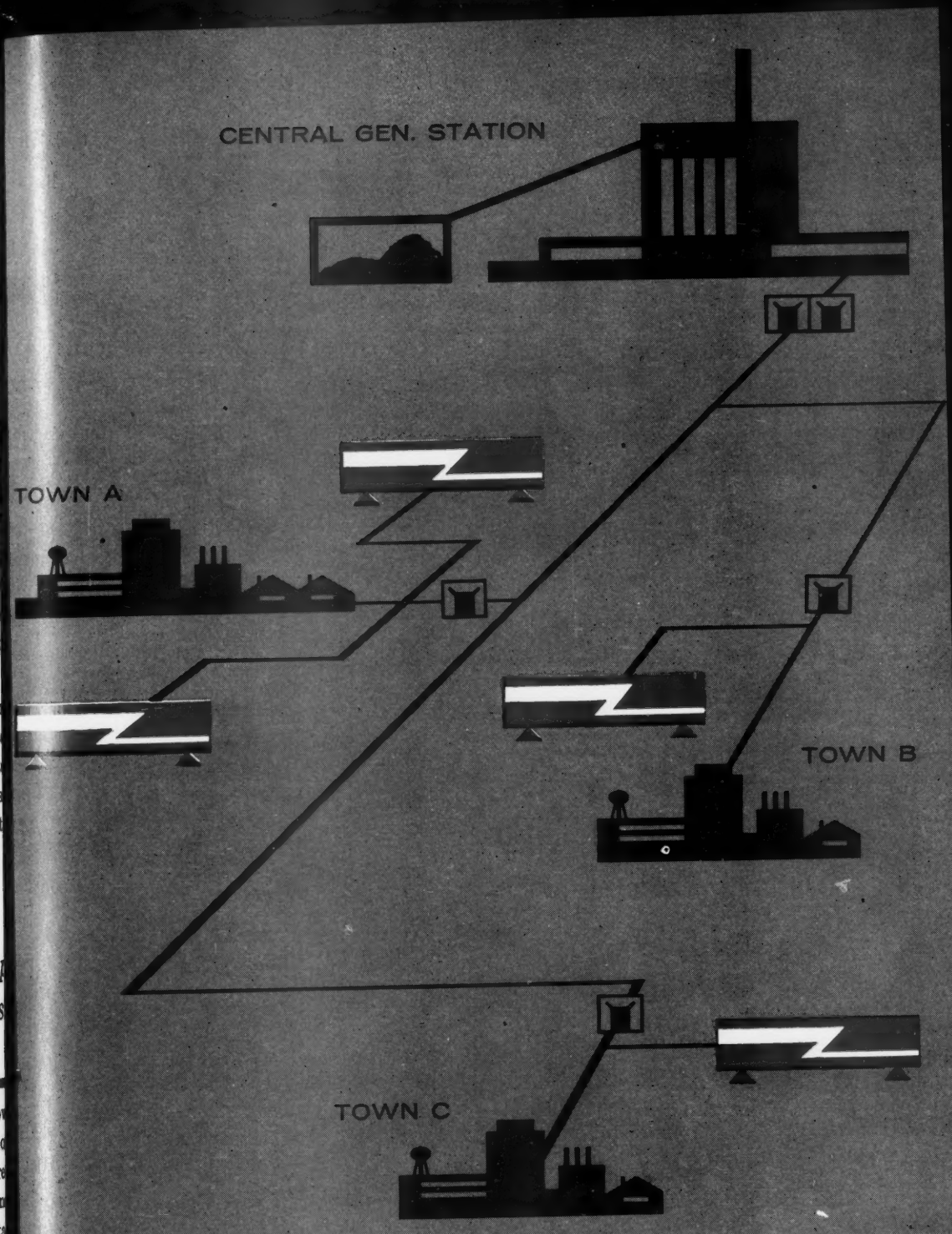
Increased demand of 5000 kw at central station picked up in less than 60 seconds by four 1000 kw Electro-Mobile units



RAIL CAR—1000 kw units for use on sidings or placed on piers for semi-permanent use.

TRUCK TRAILER—500 kw units offer excellent mobility for many temporary applications.

This simple diagram suggests how Electro-Mobile Power located at points of load can effectively reduce reserve requirements and costs. Assuming a 1000 kw line loss at time of peak from the central station, only four 1000 kw EMP units are needed to pick up a 5000 kw demand. Naturally, line loss will vary according to the make-up of the system. However, an analysis of your peak line losses will show what savings can be expected.



ELECTRO-MOTIVE DIVISION
GENERAL MOTORS LA GRANGE, ILLINOIS
Sales Offices in Chicago, New York, St. Louis, San Francisco

(*Continued from page 26*)

to giant off-highway haulers rated at 96,000 pounds GVW.

Of the 2,610,441 International trucks built during the 1907-1956 period, more than 1,100,000 currently are in use throughout the nation. Different as they are in appearance and performance, there is a strong bond linking the early Auto Wagon and today's International truck line.

The first International motor trucks were actually "IHC Auto Wagons" or "IHC Auto Buggies," the designation "motor truck" not being applied until 1910 and the trade name "International" was not bestowed until 1914.

Although they were slow (the instruction booklet warned against speeds over 20 mph) and resembled horse-drawn wagons in appearance, Auto Wagons admirably fulfilled the purpose for which they were designed: hauling produce to market.

By 1915, with motor trucks beginning to emerge as an important factor in the transportation industry, production was switched to a limited "line" of new trucks. They were low-wheeled vehicles with increased power and speed.

It was the U. S. Army's use of trucks in World War I that gave the trucking industry its first big boost. A great number of military vehicles were manufactured, causing an industry-wide production rise from 92,000 trucks in 1916 to 227,250 units in 1918. However, by the time the war ended, only some 49,000 had been shipped overseas. It was the sale of left-over, surplus units that spearheaded national adoption of trucks. During that period the slogan, "Ship by Truck," began to receive prominence.

International heavy-duty trucks are built "from the ground up" to meet specific hauling requirements. Before production on a model is started, engineers determine precisely what its job will be, under what conditions the vehicle will be used, and other variable factors. The truck then is "built to the job."

The "modern" era in International truck history, following the '30's when the "C" and "D" lines were produced, was entered in 1940 when the company introduced its K-line. It comprised models ranging in size from half-ton pickups to giant six-wheel capable of handling the largest then permitted on the highway hauling of heavy loads over severe highway terrain. Production that reached 86,626 trucks.

Before all models of the K-line in production, however, International began, at the request of the government, to design and manufacture all-wheel-drive military vehicles. From December 7, 1941 until when civilian truck production was resumed on a limited basis, the company concentrated exclusively on building military trucks, armored half-tracks and other articles of ordnance.

In 1944, the motor truck division of International Harvester Company was formed to handle the growing volume of International truck engineering, production and sales activities.

The return of peace signalled the beginning of great expansion for the truck industry. The first postwar line was designated the KB-line and appeared in 1947—the 40th anniversary year of International trucks.

In 1946, the company began production of another new line of

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JUSTRITE Mfg. Co.

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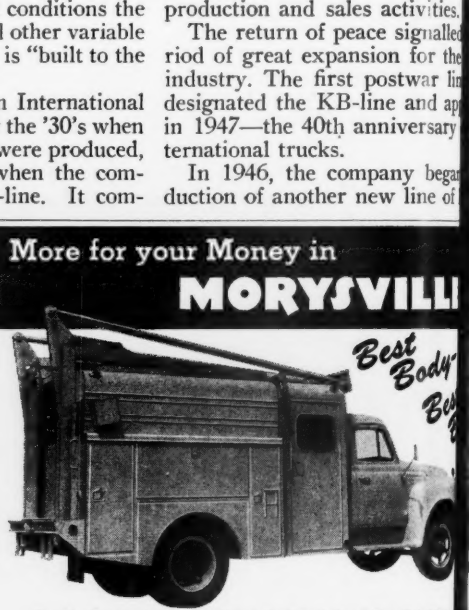

New Line Construction Body for single or dual wheel chassis from ¾ to 2 tons. Length from 8' to 14' (CA's from 48" to 120"). Sliding roof for derrick ample stowage space inside and out. Many plus features at no extra cost.

- 14 and 16 ga. Body Steel (14 ga. throughout for models rated 1 ton up—19 ga. doors).
- ⅛" Diamond Floor Plate.
- 5" Structural Channel Understructure.
- Electric Welded throughout.
- Telescoping Roof with weather tight, easy sliding action.
- One piece Smooth Welded Drawers and Compartments.
- Vertical or Horizontal Flush Doors with recessed, spring loaded latches at no extra charge.
- Concealed metal Winch Box.
- Curbside Access to tools and equipment used most frequently.
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- Large, inside ventilated, Refrigerated Goods Compartment.
- Two piece Front Window in compartment.
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STRIAL PROGRESS
inued)

lized trucks. The impressive
ts in this latest link in the ex-
g company chain were heavy
-duty "Western-type" models.
g up to 90,000 pounds in gross
e weight, these models were orig-
designed to conquer the dis-
and mountainous terrain of the
n states and rugged off-high-
auling jobs. Certain models are
eral use throughout the nation.
ck transportation and the de-
for more and better trucks were
ing along even faster than the
ng general post-war economy.
motor truck division, which in
produced a record of 165,600
trucks, kept pace with demands
1949 introduced the L-line. Of-
a "truck for every hauling job,"
line was considered a significant
ry development.

ically the L-line consisted of
wheel trucks ranging in gross
e weight from 4,200 to 30,000
s; a series of new multi-stop
a group of six-wheel chassis
g up to 50,000 pounds gross ve-
weight, and a group of cab-for-
units ranging upward from
0 pounds GVW.

1952 the company opened its
and complete truck engineering
g and laboratory in Fort Wayne.
d by hundreds of engineering
esearch specialists, this labora-
s the largest of its kind dedicated
to motor truck development.

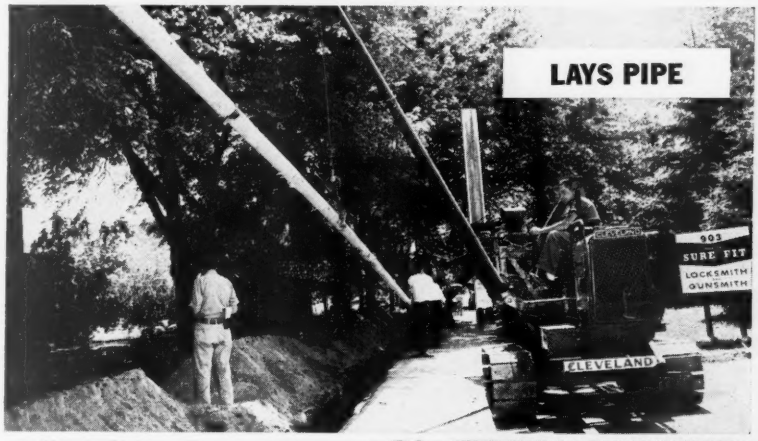
ee years after introduction of the
, it was supplanted with the R-
which carried specialization to
greater heights. Where the L-
ad consisted of 87 basic chassis
s, the R-line had 168, in 296
bases.

hird development helped make
significant year in the Interna-
truck record. For the first time
tor truck history, International
d the industry Underwriters-
factory-installed liquefied-pe-
m-gas-powered engines. These
" powerplants offered many
ts in operating efficiency and
d operating costs to thousands
ck users throughout the nation.
inement after refinement high-
d the ever-growing line of Inter-
al trucks during the ensuing
until 1955, when the S-line of
medium and heavy-duty trucks
troduced.

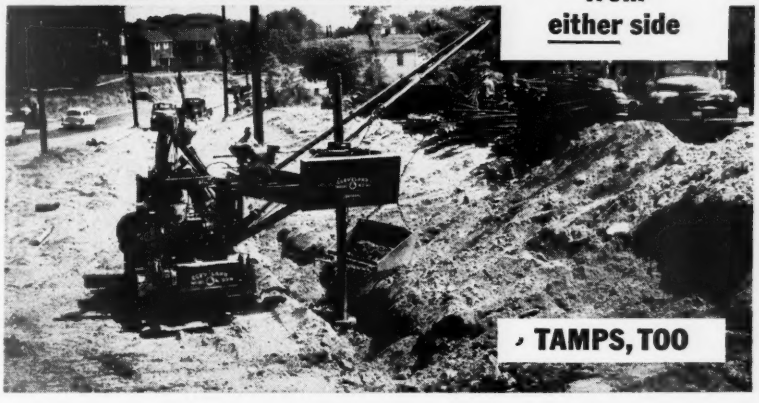
S-line incorporated style-set-
esign, new power and increased
nd ruggedness and durability.
ing a wide and complete range
r and six-wheel gasoline and

(*Continued on page* 32)

The Cleveland 80W
...a real money maker



FILLS TRENCH from either side



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Send without obligation for our current list of tax-exempt offerings and an accompanying tax chart showing the yield advantage of tax-exempts for an individual in your income bracket.

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35 WALL STREET, NEW YORK 5
AND OTHER PRINCIPAL CITIES

LPG powered trucks, the S-line offered a selection of 4,200 to 33,000 GVW vehicles in great variety.

Earlier in 1955, International four-wheel drive motor trucks were added to the line. And it was at that period that automatic transmissions, power brakes, and power steering were made available. The following year, a series of powerful six-wheel-drive trucks was announced.

In 1956 the company unwrapped its V-line trucks, featuring three new V-8 truck-type engines, designed and built specifically for heavy-duty operation.

The International motor truck division balks at the use of the word, "history." Since 1907 it has thought only in terms for the future. Today, its personnel is hard at work preparing new developments for truck operators; striving always to provide the best product for the specific job.

Although producing no passenger cars, International Harvester is said to be the world's fourth largest manufacturer in the automotive field. It claims third rank in the nation in volume of truck sales and industry leadership in production of heavy-duty, six-wheel and multi-stop trucks.

The company is represented across the United States by more than 5,000 dealers and company-owned outlets.

There are 50 years and billions of motor truck miles between that first unpretentious "Auto Wagon" and today's tremendous International line.

And while the company may pause briefly to pridefully survey the progress made over the last half-century, its golden anniversary by-word is not "We've come a long way," but "Look where we're going."

Cable Trough Saves Space and Costs for Cleveland Elec. Illuminating

THE ingenious design of an expanded-metal cable supporting system has helped The Cleveland Electric Illuminating Company save substantially in space and costs at its Ashtabula station. The basic problem was to support 39 new cables over a 75-foot vertical run without greatly disrupting floors, walls, and existing equipment. The problem was solved by installing a central double riser of two 12-in. cable trough runs back-to-back. The resultant saving in cost is hard to measure but, according to T. J. Cope, Inc., CEICO is satisfied that it was substantial. The manufacturer further states that cable trough is less costly than conventional supports and, more important, is much less costly to
When it is used to supplement
isting system there is less dis
and confusion during installati
completed job is simple, neat,
cables are available for inspect
routing, and checking as neces

Bay Shore Station of Tol
Edison Combines Three T
Of Cable Supporting Sys

TOLEDO Edison's 135MW
Shore station was completed
end of 1955. The electrical distr
system incorporates three s
types of supporting systems: c
set in the concrete (also e
runs), expanded metal cable tr
the electrical control building
solid cable trough with solid co
the switchgear room and th
chanical terminal cable room.

Cable trough can often be u
advantage either to supplement
isting conduit system during pl
pansion or, to tie in with condu
ing construction of a new plan
cording to the manufacturer,
Cope, Inc., expanded metal
trough saves a great amount of
reduces material, is simple to
and install, and leaves the cables
able for inspection, maintenanc
pair, and rerouting. During lat
pansion or changes, new cables
readily be laid in existing t
Moreover, cable current air ratin
substantially higher (most eng
figure free air ratings) as air ca
culate freely around and betwe
cables.

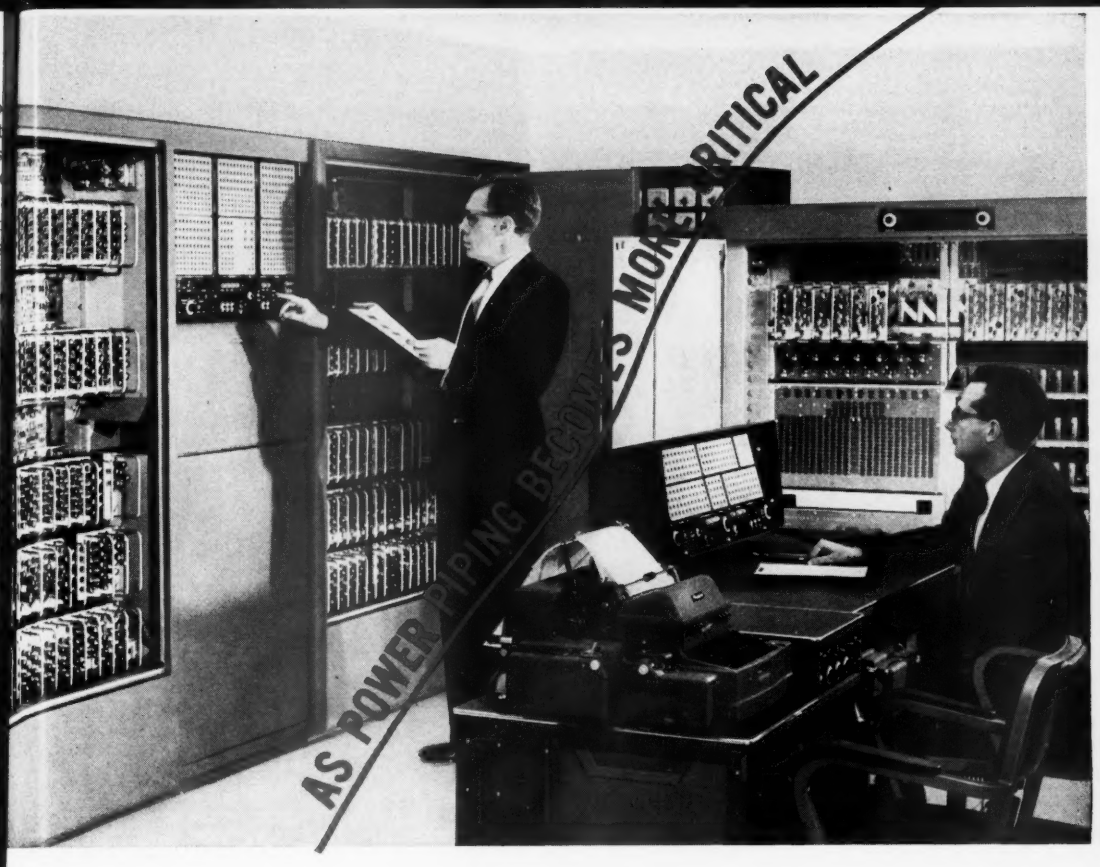
A solid trough system is used
complete protection of the cables
dirt, mechanical objects, etc.,
quired. It combines the advanta
a completely enclosed system
space and materials savings and
tively simple installation. The m
facturer states that Toledo Edi
satisfied with cable trough and e
to have greater use for it as furth
ditions are made to its system.

Detroit Edison Continue
Expansion Program

ACTION to meet the steadily m
ing use of electricity throughou
troit Edison Company's 7,600-s
mile service area shows up b
1956 construction expenditure
$89,000,000 and in already anno
plans to spend an equal amou
1957, according to the company's
annual report.

The 1956 gross construction

(*Continued on page* 34)



llogg's Design Calculation Techniques Keep Pace

Latest and most valuable electronic addition to The M. W. Kellogg Company's facilities for solving the design calculation problems of power piping customers is a new, large magnetic drum digital computer. It can execute 500 arithmetical operations per second; conservatively can solve 40 simultaneous equations in 30 minutes; and has a memory capacity of over 4000 ten-digit words. This computer is now in use at Kellogg's new New York Headquarters, and supplements a smaller computer which has been employed for some time at M. W. Kellogg's Jersey City laboratories.

This new computer enables The M. W. Kellogg Company's engineering staff to undertake a far greater number of precise calculations in less time than ever before and, as a result, to determine the optimum main and reheat steam piping designs for steam-electric power plants in minimum time.

A cordial invitation to see the new Datatron computer at work is extended to consulting engineers, and to engineers of power generating companies and their equipment manufacturers. Appointments may be made by contacting the office of the Sales Manager, Fabricated Products Division, The M. W. Kellogg Company, 711 Third Avenue, New York 17, N. Y.

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POWER PIPING—THE VITAL LINK

penditures went in very large part for power generating facilities at the new River Rouge power plant. There, the biggest generator on the system, with a capability of 265,000 kilowatts, began full operation in February of last year. A second River Rouge unit of the same size is scheduled for service this coming September, and a third unit of 320,000-kilowatt capacity is expected to go on the line in April of 1958.

Detroit Edison's 1956 construction program also included work on buildings to house two new 325,000-kilowatt generators at the St. Clair power plant, now planned for operation in 1959-60.

In the report to stockholders, Detroit Edison President Walker L. Cisler also comments on the company's part in developing atomic energy for the generation of electric power. The company is a member of Atomic Power Development Associates, Inc., and Power Reactor Development Company.

Detroit Edison will build, own and operate a conventional turbine-generator plant to be run on steam purchased from the Enrico Fermi atomic power plant, construction of which was started by PRDC last August.

Ohio Edison System Plans $68,850,000 Program

THE Ohio Edison System's construction activities continued at a high level in 1956, according to Walter H. Sammis, president. During that year expenditures for additions and improvements to property amounted to $51,886,013. For 1957, expenditures of $68,850,000 have been authorized.

Among the major construction projects under way during the year were a 90,000-kilowatt addition to Ohio Edison's Edgewater power plant at Lorain, expected to be in operation in the summer of 1957, and a 90,000-kilowatt addition to Pennsylvania Power's New Castle plant, scheduled for completion in 1958. Ground was also broken last May for a new power plant for Ohio Edison Company at Stratton, Ohio, on the Ohio river. Four units with a total generating capacity of 680,000 kilowatts are planned for this plant, with the first unit expected to go into service in 1958, and the fourth in 1961.

Ohio Edison and its subsidiary, Pennsylvania Power Company, together with 10 other electric companies operating in the Ohio Valley and contiguous areas have formed a group which is now formulating plans to undertake a program of nuclear research and development.

Con. Ed. to Spend $650 Million In 5-Year Period

EXPENDITURE of $650 million for new construction in the five-year period 1957-61 has been tentatively scheduled by Consolidated Edison Company of New York, Inc., according to the company's 1956 annual report.

The company had announced earlier that its budget for 1957 calls for the spending of $146 million, compared with $157 million spent in 1956.

Progress is being made on the installation of new capacity. Additions include a new unit for the Astoria station, due to begin operations in 1958, and two units at the new Arthur Kill station on Staten Island. Each unit will have 335,000 kilowatts of capacity and add a combined total of 1,005,000 kw.

Initial steps are under way in the program to build the 275,000 kw atomic power plant at Indian Point, in Westchester county.

Wright Saw Subjects New Saw To Rigorous Tests

WRIGHT SAW has just completed what is said to be one of the biggest in-use tests ever to be undertaken for a product prior to its introduction to the consumer. The result is an entirely new version of the popular Wright Power Saw. This new version of the gasoline-powered, reciprocating blade action saw has been given the name of "Wright Rebel."

More than a year ago, testers in all parts of United States and Canada agreed to put the saw into day-in, day-out use over a period of several months and agreed to report their findings, both pro and con. After months of field testing, these saws were returned to the research laboratories of Wright Saw. The comments of the field users were carefully studied and suggestions investigated. From all of this emerged the new Wright Rebel.

According to the manufacturer, one of the biggest changes in the saw is in the front assembly, which has been completely redesigned to operate at top efficiency even under sandy soil conditions. The governor assembly has been redesigned to provide smoother and more efficient operation. The front housing has been completely sealed to prevent entry of foreign matter into the engine. Many other changes and improvements have been made with view to providing longer wear, g safety and ease of handling.

Further information and price be obtained from the Wright Saw Division, Thomas Indus Inc., 410 South Third street, L ville 2, Kentucky.

American Power Conferen Hears Heat Pump-Solar Energy Discussion

"COMFORT conditioning"— round control of the temperatu your home from a single syste rapidly becoming a reality. This the opinion expressed at the Ame Power Conference by R. C. Jo professor and head of the mecha engineering department at the versity of Minnesota.

The three-day conference in cago, Ill., was sponsored by Il Institute of Technology, in coo tion with 14 other colleges and u sities and nine technical societies

Discussing revolutionary ch that have occurred in man's cont climate for need and comfort, Jordan pointed out that increase of all-year space conditioning sy in homes and industry is incre the desirability of living in nor climates, and making more bea the lower latitudes.

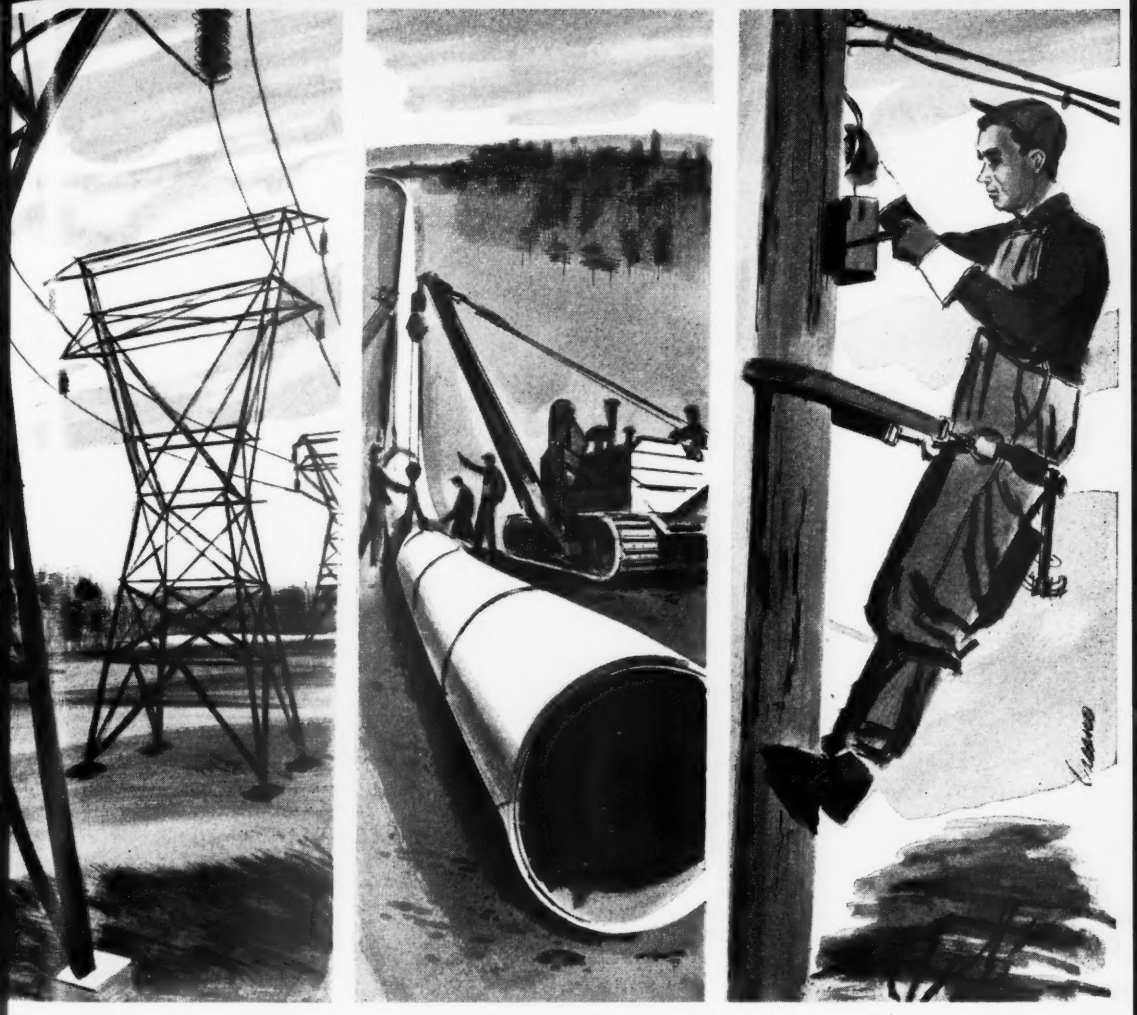
But fuel needs that will be req to supply a larger population more widespread use of year-r heating and cooling systems will necessary the conversion of co fluid fuel—possibly within a deca so, Mr. Jordan predicted.

"The foreseeable fantastic worl ergy demands, and limited store ergy sources, may make fluid co nation's dominant fuel by the tu the century," he said.

Solar energy—capable of supp all heating needs even at pres mild climates—will see a lag in ac ance because of large capital in ments, problems in integrating collector design into architecture the relative abundance of fossil that still exist at lower cost. Bu cent developments have brought closer the era of low cost solar he he noted.

Among the developments are a tic film that may eventually be ch than glass as a bounding surface t parent to solar radiation, and me of surface treatments for both co and aluminum which provide

(*Continued on page 37*)



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- ► increasing the confidence of investors

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The Nature of the Utility Rate Proceeding
Events Leading Up to the Rate Case
Selection and Function of the Attorney
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(*Continued from page* 34)

ption of solar energy and low re-
ion of energy from the collector

e Minnesota professor noted
ne of the interesting near future
ilities for using solar energy for
heating is as a heat source for
pump systems (those providing
ar temperature control).
esent heat pump systems, using
r water as their primary heat
es, are most feasible in mild
tes.
se of solar energy as a heat
e, either partial or total, would
t the economic expansion of heat
s to the more northerly sections
country," Mr. Jordan said.

C Offers Processing Service Owners of Private Reactors

DING the setting up of com-
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ic Energy Commission has estab-
a policy to provide for chemical
ssing services for the operators
vate nuclear reactors.
e Commission offers to contract
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hemical processing and recovery
rce and special nuclear material
ned in irradiated fuel elements
ed from the reactors.
ividually negotiated contracts
tablish firm charges for the ser-
subject to escalation on the basis
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on by the Commission, after
g 12 months' notice, upon a de-
nation that the services will be
ercially available at reasonable

e purpose of the new policy is to
further encouragement to the de-
nent of a private atomic energy
try by giving licensed reactor
ors an assured means for re-
ing the valuable constituents
remain in spent fuel elements
their removal from reactors.
Commission service covers
disposal in addition to proc-
of irradiated fuel elements
blanket materials.
adiated fuel elements are "spent"
ts removed from a reactor. Sub-
l quantities of fissionable ma-
are still present in the elements
hese can be recovered for re-use.
erm "Blanket materials" refers
rtile materials which may be
d around the reactor core to be
nuted into fissionable material.
r irradiation, the blanket is taken
the reactor and subjected to proc-
to remove the fissionable ma-

terials produced through the action of neutrons.

So far, operations of this sort are being performed only by government-owned plants at various Atomic Energy Commission sites.

The Commission announced last year that it had approved a program to encourage private industry to build and operate plants for the chemical processing of irradiated fuel elements from research and power reactors. Under this program various meetings and seminars have been held for the information of industry, and the Commission has made available to interested firms its technology in the field of chemical processing. This program will be continued.

It is recognized, however, that several years will elapse before commercial processing plants can be put in operation, and that meanwhile reactor owners must have assurance that the service will be available when needed. The Commission, therefore, is prepared to contract to provide these services with owners of licensed reactors for a term extending to June 30, 1967.

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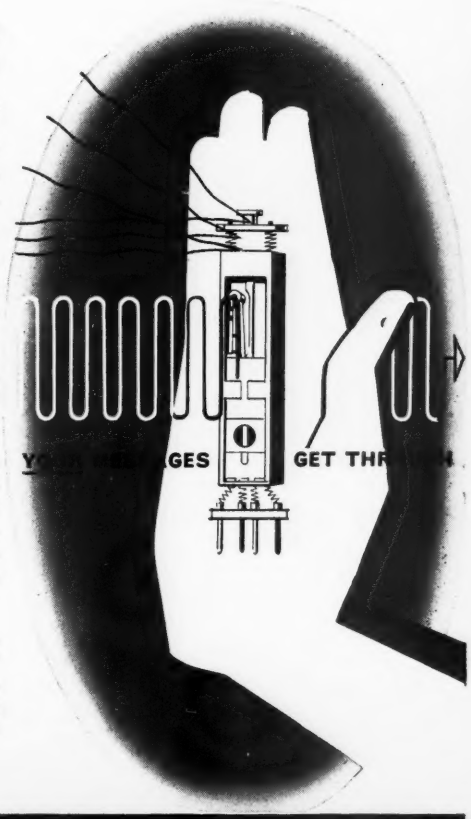
...a new dimension in two-way radio communications—the result of ...of extensive engineering and "on-the-job" field testing. PRIVATE-...radiophone incorporates an entirely new circuitry concept which ...es privacy from interfering signals and unwanted co-channel mes-... Now you can "get off the party line." No longer is it necessary ...en to a constant stream of "channel chatter" over the loudspeaker. ...ATE-LINE radiophone is *completely quiet* except when receiving a ...om another PRIVATE-LINE radiophone in the same operation.



...DUCES MISSED AND MISUNDER-...TOOD MESSAGES—operators hear ...ly messages within their own ...eration—minimizes confusion, in-...ention.

...NCREASES OVERALL EFFICIENCY—...wer errors mean more produc-...ve utilization of time—fewer re-...eat messages—more dispatched ...hicles per hour...real advantages ...ring peak load periods.

...NCREASES AREA COVERAGE—..."Added squelch" circuit automati-...ally maintains optimum receiver ...nsitivity, assuring maximum com-...unications range at all times—prevents desensitization of the receiver by accidental or intentional misadjustment.

- **EASIER TO OPERATE**—no additional buttons, lights, adjustments or operational techniques—elimination of squelch adjustments makes PRIVATE-LINE even simpler to operate than conventional two-way radio equipment.
- **REDUCES OPERATOR FATIGUE**—elimination of "channel chatter" enables operator to concentrate on his job—reduces tension, providing a more pleasant atmosphere—increases job satisfaction.

MOTOROLA

Private-Line

MOTOROLA Communications & Electronics, Inc.
4501 Augusta Blvd., Chicago 51, Ill.

☐ Send me additional information
☐ Have a Radio Engineer call on me

NAME_____

COMPANY_____

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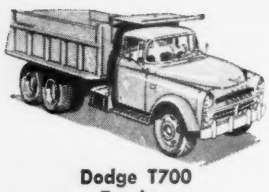
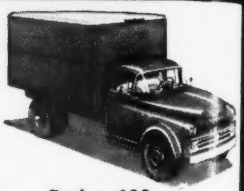
...nly complete radio communication service—by the outstanding leaders of the industry

DODGE PowerGiants

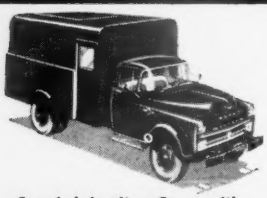


Dodge T700
Tandem

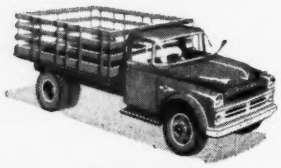
Dodge P300
Forward-Control



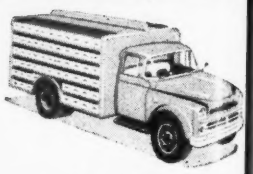
Dodge 600
with Van Body



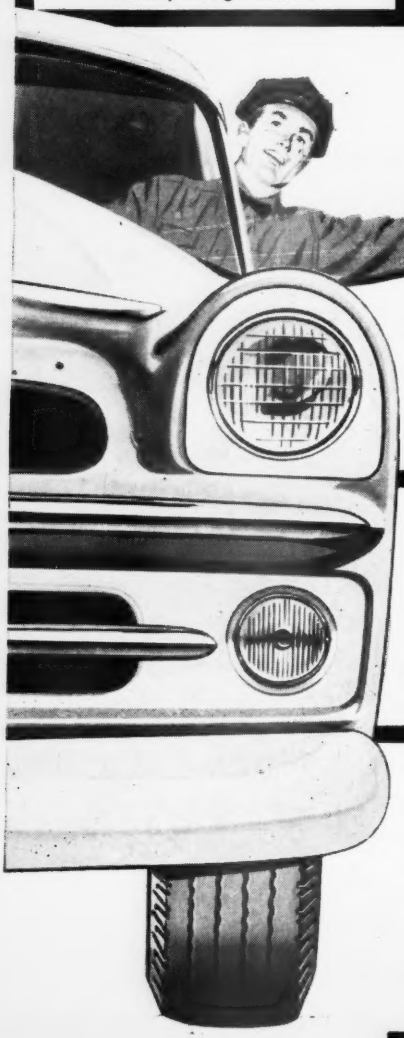
Special bodies fit readily
on any Dodge chassis



Dodge 500
Stake



Dodge 400
with Beverage Body



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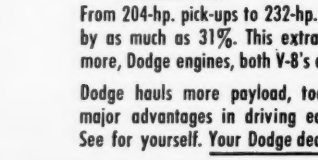
LOW-PRICED 3
. . . In every weight class

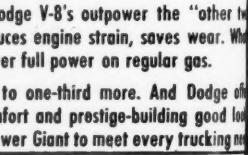
Dodge Power Giants give you an extra bonus of power.

From 204-hp. pick-ups to 232-hp. tandems, Dodge V-8's outpower the "other t by as much as 31%. This extra power reduces engine strain, saves wear. Wh more, Dodge engines, both V-8's and 6's deliver full power on regular gas.

Dodge hauls more payload, too . . . up to one-third more. And Dodge of major advantages in driving ease, cab comfort and prestige-building good lo See for yourself. Your Dodge dealer has a Power Giant to meet every trucking ne



Dodge C.O.E. 700
Tractor



Dodge 100
Panel

Collect Your Extra Dividends
April is Extra-Dividend Month

Get *extra dividends* in power, *extra dividends* in payload, *extra dividends* in performance . . . plus a special *extra-dividend* deal on a new Dodge *Power Giant*.

DODGE TRUCKS WITH THE FORWARD LO